

VALUE MANAGEMENT AS A COST CONTROL APPROACH TO IMPROVE PROJECT WITH VALUE FOR MONEY DURING DESIGN STAGE

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ABSTRACT: Value Management (VM) is a methodology that has been adopted to facilitate decision-making on construction projects to deliver ‘value for money’ for clients[1]. It provides various approach to meet project needs and functions as required by the clients. This paper aims to investigate the needs of VM practice in the Malaysian construction industry. This paper employs quantitative approach by distributing total 313 numbers of questionnaire to various construction firms. It is indicated that VM is a worthwhile practice to enhance value and achieve cost savings for construction project. However, design liability related issue and adversative attitude of original design team are the main problems of VM practice. It is also found that VM practice has great potential to impact life cycle costing and performance of construction projects.

Keywords: Value Management, Value for Money, Construction Project, Value, Functions, Impacts

1. INTRODUCTION

Construction industry is known to be one of the great industry in developing countries, particularly in Malaysia, with an average contribution of 5% to 9% of the gross domestic product (GDP)[2]. It is evident that the construction industry plays a key role in shaping the nation, by enhancing the economic performance and public welfare with proper allocation of various resources. This in turn leads to the growth of economy in Malaysia as benefits are generated in the forms of income, employment, or tax revenue. As the nation develops, the demand for varieties of construction products are also increasing, ranging from housing and shop office buildings, bridges, highways, infrastructure products. This eventually promotes the development of Malaysia in all aspects.

However, in recent year, the booming of construction projects begin to be tightened due to economic slowdown. There are many construction projects have been suspended and abandoned, whereas most building projects are suffering from cost overruns. This phenomenon is worrying to all parties in the construction industry as client’s main concern is to achieve balanced triangular relationship between time, cost, and quality. Therefore, when there is inefficiency use of resources in construction projects, it becomes the apprehensions for many experts in the construction industry. The professionals start to realize that any inefficiency use of resources will incur hidden costs that will not enhance the project value[3]. If the situation continues, it will discourage the flow of investment for building or infrastructure projects in the construction industry.

As the existence of these chronic problems have already become the topic of discussion among the professionals in construction industry for the past two decades, Institute of Value Management Malaysia

(IVMM) has finally established Value Management (VM) as value process system that targets to ameliorate the project value. This is why VM take places in the construction industry and emerges as a model that directed to the project objectives to provide increased value to the client[4].

VM is defined as team orientated, systematic and structured process which is used to provide analysis in accordance to the functional requirements and objectives of the projects in order to achieve value for money by delivering necessary functions at the least cost[5] [6]. Due to its known benefits with many successful adoptions of VM in the construction industry, especially in numerous number of other countries, it starts to obtain more positive responses and demands than before [7]. This is most probably because clients or the occupants of the building hope to satisfy their ideal needs by reducing unnecessary waste as possible to achieve better value for money for the project.

2. OBJECTIVES

The objectives of this research are:

1. To investigate the necessity of implementing VM in construction projects as to improve the value of buildings for clients.
2. To evaluate and rank the benefits of implementing VM in construction projects.
3. To evaluate and rank the drawbacks of implementing VM in the construction projects.
4. To identify the impact of VM implementation on the projects.

3. RESEARCH METHODOLOGY

The research instrument in this study is a set of structured questionnaire to collect data, analysed and represented in descriptive statistics. The questionnaire comprises four parts of discussion, mainly identifies the respondent's background, the needs and worthiness of VM, the benefits and critiques that can be obtained by VM practice, as well as the impacts of VM to construction projects. The data collected from the questionnaire survey has been analysed using frequency analysis and average index analysis. The online questionnaire was sent the targeted respondents, comprising developers, architectural firms, civil engineering firms, mechanical and electrical engineering firms, as well as quantity surveying firms in the state of Selangor.

4. FINDINGS AND DISCUSSION

4.1. The Needs of VM

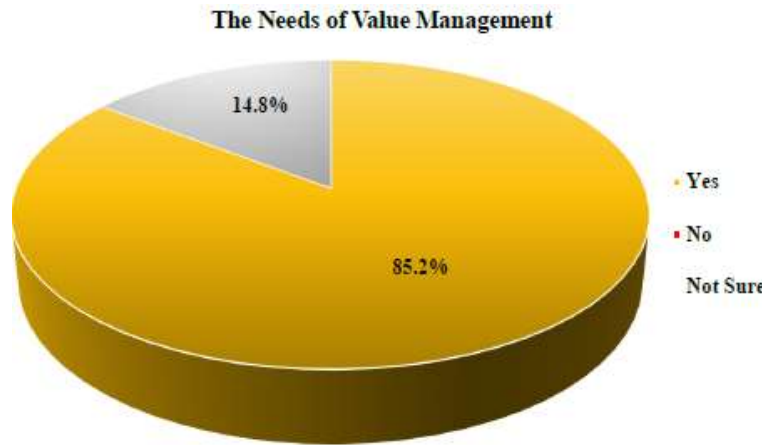


Figure 1. The Needs of VM in the construction industry

From the survey responses, 85.2% agree that VM needs to be adopted in the Malaysian construction industry, whereas only 14.8% of the respondents do not agree.

Coetzee believes that implementation of VM practice brings more benefits outcomes than threats for construction projects[1]. As most of the construction projects are often suffering from cost and time overruns, VM practice; thus, should be implemented to reduce time consumption and construction cost. Other reasons why VM is applied because VM helps client to achieve value for money by reducing unnecessary cost[1]. It is agreed that the current Malaysian construction industry requires the input from VM concept to enhance value for construction project.

4.2. Value for Money for Construction Project

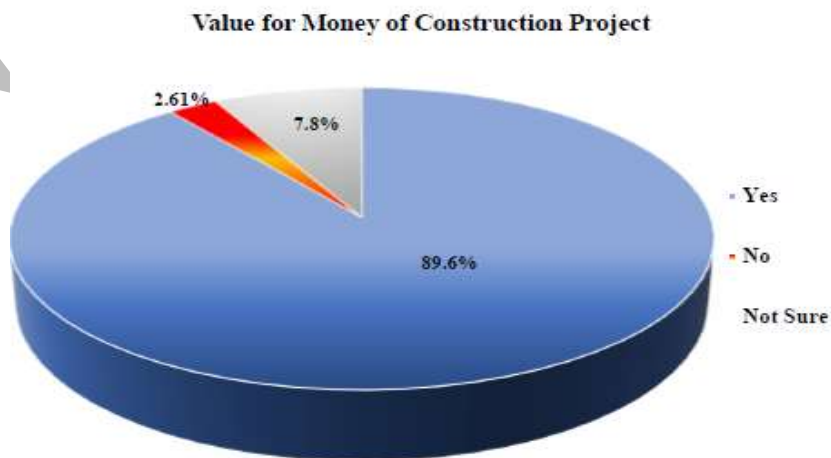


Figure 2. Value for money for construction project

Figure 2 indicates that 89.6% of respondents agree that VM could bring value for money to client. This explains why the majority of the respondents are in favour of adopting VM as an effective techniques to obtain the value for money to clients[8][9]. This is because VM is able to generate various ideas and solutions by VM team members to enhance project value, and such efforts allow professionals to better fulfill clients' needs.

4.3. The Benefits of Implementing VM

Table 1. The Benefits of VM

Type of Benefits	Rating Scale	Average Score	Rank
Concentrating expenditure on adding value	Agree	4.278	1
Project cost savings	Agree	4.174	2
Improving communication and understanding	Agree	4.061	3
Improved project management structures and systems	Agree	3.957	4
Considerations of design options	Agree	3.922	5
Time savings in design, construction, and approvals	Agree	3.783	6
Expediting decisions	Agree	3.635	7
Forecasting risks	Neutral	3.435	8
Minimizing wastage	Neutral	3.217	9

The results in Table 1 shows that the respondents agree that concentrating expenditure on adding value, project cost savings, and improving communication and understanding are identified as the major benefits of implementing VM in the order of descending ranking. However, they do not see forecasting risks and minimizing wastage as major benefits of VM.

Obviously the implementation of VM aims to concentrate expenditure on adding value. If VM is not adopted for the project, there are high possibilities that expenditure will be spent on unnecessary building components that possess no real functions[10]. When the clients' objectives are properly delivered, this will improve the financial commitment for the construction project. In addition to that, project cost savings is also identified as an important benefit of VM. If all experienced professionals properly conduct the VM programme, an expected cost savings of 5 to 10% can be achieved [7] [11]. Although VM programme necessitates expenditure, this expenditure can be recovered by eliminating unnecessary cost.

4.4. The Drawbacks of Implementing VM

Table 2. The drawbacks of VM

Type of Drawbacks	Rating Scale	Average Score	Rank
Design liability of VM proposals	Agree	3.730	1
Adversative attitude of original design team	Agree	3.557	2
Lack of defined approach to functional analysis in practices	Agree	3.522	3
Lack of a precise approach in functional cost modelling	Agree	3.513	4
Time consuming	Neutral	3.383	5
Interruption to the flow of design work	Neutral	3.313	6

Table 2 indicates that design liability of VM proposals, adversative attitude of original design team, lack of defined approach to functional analysis and lack of precise approach in functional cost modelling are identified as the major drawbacks of implementing VM and in the sequence of ranking. The respondents are neutral on time consuming and interruption to flow of design work as drawbacks of VM.

The design liability of VM proposals remains as the main concern of many professionals. External VM team and internal design team are not sure about the liability issue that may affect them for implementing any recommended VM proposals [12]. Thus, it becomes the main issue of VM study.

Moreover, adversative attitude of original design team poses barriers to the implementation of VM. The original design team argues that they know better than the VM team regarding the requirements of construction project [13]. However, this matter is subjective in nature and highly dependable on the behaviour of the professionals.

4.5. The Impacts of VM

From figure 3, the ranking of VM impacts by the respondents in descending order is more focus life cycle costing, enhance project performance/quality, timely delivery of the project, and effective functionality of the project.

Life cycle costing techniques have to be applied in designing a construction project because the project designs have significant impacts on maintenance and operation cost [1]. Despite that the designers have high capabilities and experiences, unnecessary hidden costs are still unavoidable. Therefore, when VM programme is implemented, design team members should have all the necessary information related to project life cycle, maintenance and running cost, return on investment, et cetera to make wise decision

for building design. Normally, materials are selected to replace certain building components with least cost, therefore, considerations should be taken on replacement cost of building components.

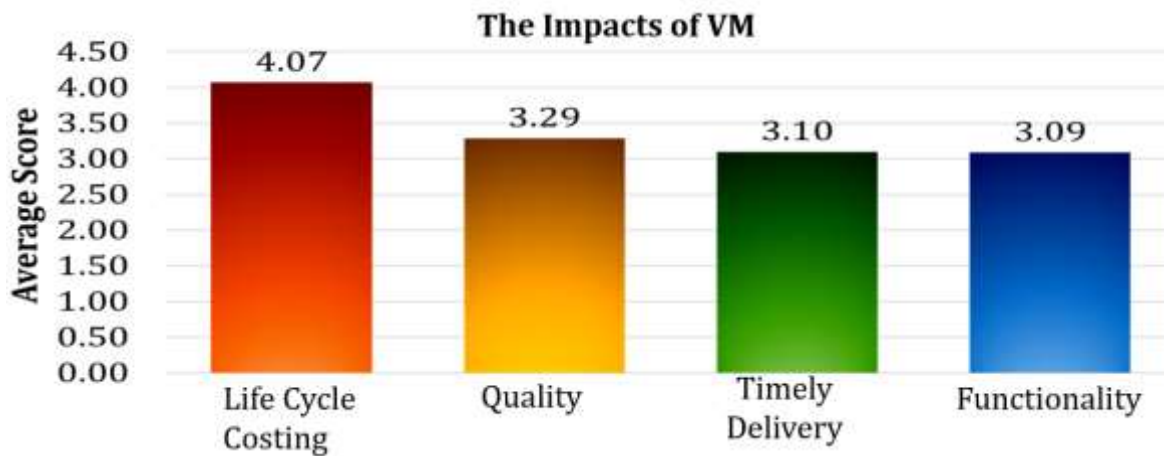


Figure 3. The impacts of VM

5. Conclusion

The respondents opine that Malaysian construction industry is in need of VM to continuously improve value for money to construction project. It is required in the construction practice to eliminate unnecessary costs that have been spent on construction components or elements that create no real functions.

The benefits reaped from VM practice are concentrating expenditure on adding value, project cost savings, improving communication and understanding, improving project management structure and system, more considerations of design option, time saving and lastly faster decision making during the process of development. However, the consultant must bear in mind of the heavier design liability of VM concept, adversative attitude of the original design team, lack of defined approach to functional analysis and lack of precise approach to cost modelling are the hinderances towards the adoption of VM. VM team and original design team should work together to generate the best outcomes for construction project. Despite that the design liability of VM proposals remained the main problem of VM study, it should not stop the efforts contributed by both design teams to continuously improve value for money to client.

As the cost of operation and maintenance of a construction project is varied according to the designs, professionals should take considerations on any components of building before making any decision in designing the project. This is because the lowest cost of design is not always the best choice for client, a more focus life cycle costing should also be considered on behalf of the client and end-users in the long run it will enhance the performance and enhance the functionality of the projects involved.

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