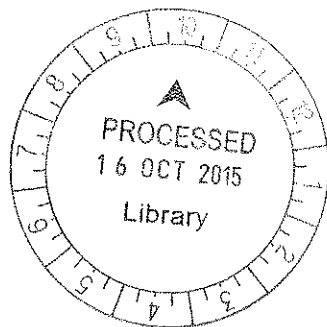


**A STUDY ON BARRIERS AND CHALLENGES
TO VALUE MANAGEMENT
IMPLEMENTATION BY QS FIRMS IN
SELANGOR**

FOR REFERENCE ONLY

**BY
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This report is submitted as a partial requirement for the degree
of

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Mathematics**

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DECLARATION

I, Thien Yung Wei, I12000314, declare that this thesis entitled “A study on barriers and challenges to value management by QS firms in Selangor” is the result of my own research except the resources are adequately acknowledged in the references.

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29th April 2015

Abstract

Malaysian government has realized that it is a must to modernize the construction industry to keep in line with the modern technology such is BIM or knowledge such as value management. It is aids to ensure the long term health growth of Malaysian construction industry. Value management was highlighted with the establishment of Institute of Value Management Malaysia in 2000 with help and encouragement from government agencies such as Professional Services and Development Corporation (PSDC). (M. Saifulnizam et.al, 2010) From the literature reviews that had been carried out, it was found out that the consultancy QS in the industry are short of knowledge and awareness on the benefit of value management.

Therefore, a study was carried out to determine the barriers and challenges to value management implementation. This research was conducted at Selangor through online survey and in-depth interview. Descriptive survey method and statistical tools such as Statdisk and Minitab were used for the data analysis part.

From this study, the degree of understanding of value management of QS in Selangor was at the average level. The main barriers which impede the implementation of value management are lack of knowledge and practice in value management and short of trained professionals in value management. The strategies to increase the application of value management had been developed from the data analysis too.

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CHAPTER 1: INTRODUCTION

1.1 Background Study

Value management (VM) is a service by compare and audits all the decisions against a value system determined by the client or customer in order to maximize the functional development from concept to completion. The application of VM is currently catching the eyes of parties involved in construction industry. Clients are increasingly enquiring and demanding to apply value management during the key stages especially during conceptual stage of their construction projects. It is vital that scarce resources are applied as efficiently as possible and waste in any form can be reduced to the minimum or even eliminated as even greater competition is exists in the industry than ever before.

Starting from year 1957 after the independence of Malaysia, its economic development growth has accelerated. Where there has economic activity, there is always has construction. In order to facilitate nation progress, the Malaysian construction industry had grown rapidly after year 1957. Therefore, the demand for buildings, infrastructure works such as highways, bridges, roads and airports has developed extraordinary over the past few decades due to the economic expansion.

However, after the economic depression in July 1997, there are lots of construction projects have been hold or abandoned due to the economic crisis. The other problems arising from the economic crisis are the contractors and consultancy firms did not have the ability to reduce construction cost, enhance its functions and reduce the construction period. (Ng Kim Lai, 2006)

As a result, government of Malaysia has realized that it is a must to modernize the construction industry to keep in line with the modern technology such is BIM or knowledge such as value management. It is aids to ensure the long term health growth of Malaysian construction industry.

Value management was highlighted with the establishment of Institute of Value Management Malaysia in 2000 with help and encouragement from government agencies such as Professional Services and Development Corporation (PSDC). (M. Saifulnizam & V.Coffey, 2010) The earlier stage the value management applied, the higher the potential to develop.

The introduction of Value Management in early 1980's in Malaysia has shed an affirmative light for quantity surveyor to take lead in developing value management as one of their niche area. With the increasing demand for construction projects to expand the national economy, an opportunity is given to quantity surveying profession to take lead of VM service which reflects their traditional roles for providing the optimum value for money service to the client. (M.Saifulnizam et al. 2011)

1.2: Aim

To investigate the barriers and challenges to Value Management implementation by QS in Selangor

1.3: Objectives:

For the aim to be achieved, the following objectives have been identified:

- i) To identify the degree of understanding on value management among QS in Selangor
- ii) To investigate the key barriers faced by QS firm to the successful use of value management
- iii) To develop the strategies to improve participation of QS in value management application

1.4: Problem statement

Value management has been widely accepted as an important tool in the managing of projects around the world especially in the western country. However, the implementation of value management in Malaysia is still in infancy stage. According to Jaapar et al. (2006), as compared to other developed countries such as USA and New Zealand who implementing value management, there is a knowledge gap exists between the current development and application of Value Management in the Malaysian construction industry. Parties involved in construction industry especially QS are still lack of understanding about their roles in carrying out value management, therefore to promote the practices of Value Management, it is important to understand their role and the benefits bring by VM implementation.

Besides that, the low practices of value management in Malaysia is not only due to the lack of understanding on the knowledge of VM as stated above, but also caused by other reasons. Therefore, this study is to find out the barriers faced by QS to the successful use of VM in Selangor.

1.5: Key Questions

1. What is the degree of understanding on value management among QS in Selangor?
2. What are the key barriers faced by QS firm in the value management implementation?
3. How to improve the participation of QS in value management application?

1.6 IMPORTANT OF THE STUDY (RATIONAL OF STUDY)

Value management plays an important role in the construction industries' quest for continuous improvement and innovation. The implementation of VM can assist in identifying objectives of a project; provide a robust structure for key tactical project decisions and maximizing the balance between performance and cost. Today, not only Malaysia, not only Malaysia, but the whole world is facing a tough economic challenge. It is getting more and more important now than ever before to work wisely with the resources available and to optimise value for money. This is where Value Management comes into. (Catharina, 2009)

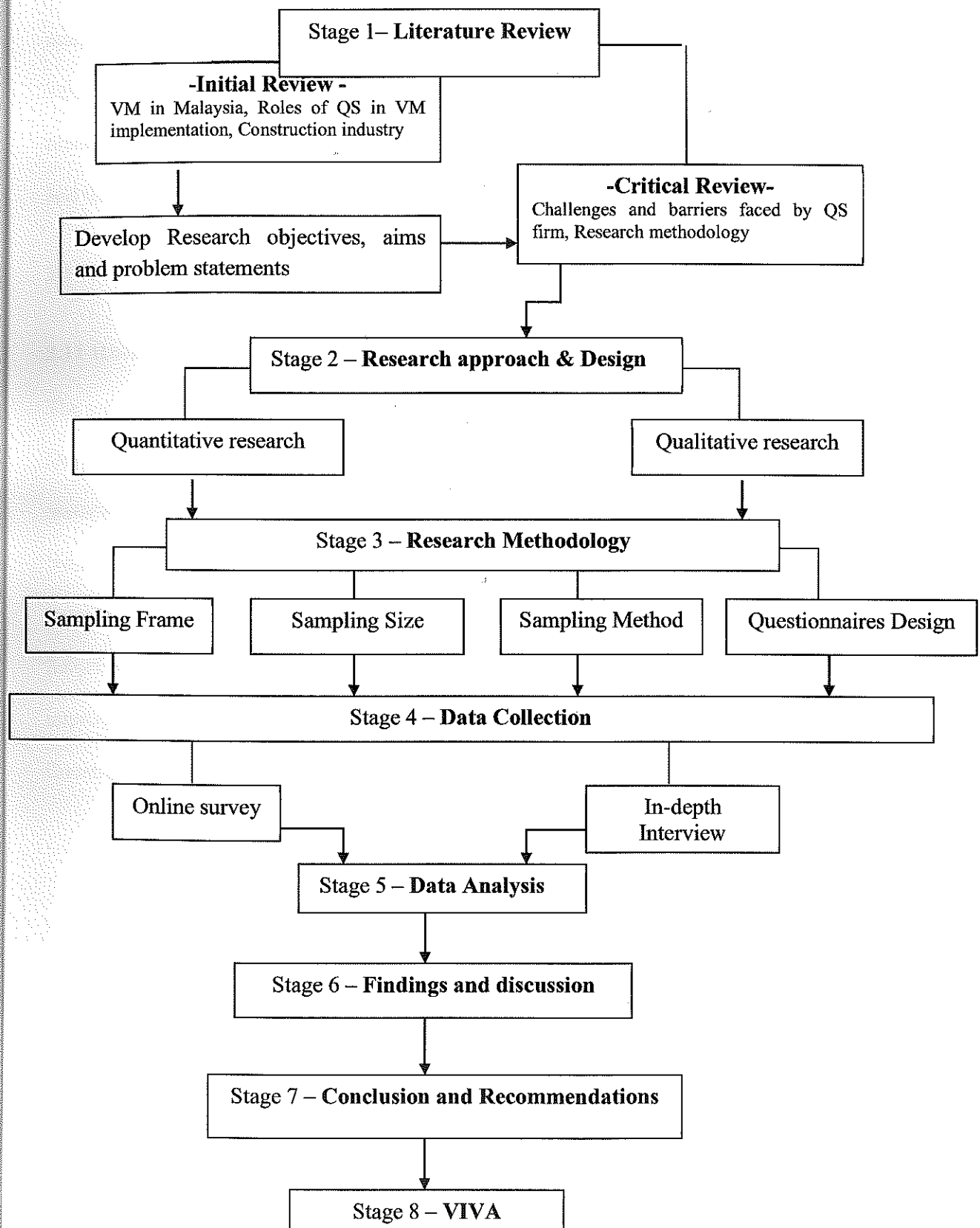
In Malaysia, Value Management is not yet a well-known concept and practiced by all the parties involved in the construction industry especially QS. Most of the parties in construction industry get confused with VM and traditional cost cutting technique. This study hopes to determine the degree of understanding of QS on value management and to investigate the barriers faced by QS in implementing VM. Value Management is a truly beneficial and a worthwhile practice to enhance the value of any construction project. It is important for Malaysian QS to become aware of and familiarise themselves with the application of value management. Malaysia is lack behind if compared to some of the developed countries like UK, USA and New Zealand.

This research on Value Management will specifically address on the VM in Selangor, Malaysia and should ideally serve as an eye opener to all parties involved in Malaysian construction industry, but more specifically directed towards a QS consultancy, who reads it and make him or her curious enough to investigate VM further and eventually implement it on a construction project.

1.7 Scope and Limitation

The value management in this study is referred to value management in construction industry and limited to consultant quantity surveyor firm only. Study is focusing on challenges and barriers to value management implementation. Area which the researcher going to carry out the study is focus on Selangor area..

1.8 Research Methodology Roadmap



CHAPTER 2.0 LITERATURE REVIEW

This section will be divided into several parts. The first part will deal with the history of value management, value management in construction industry, the definition of value management, value management in Malaysia, the comparison between value engineering and value management, the problems for value management practitioner, the process of value management, and the last sections will be dealing with research methodology.

2.1 Literature Review Related to Topic

2.1.1 History of Value Management

The value management process originated within the General Electric Company (GEC) in USA. During World War II, a problem was faced by GEC with increase on demand but shortage in key materials. Lary Miles of GEC, instead of asking 'how can we find alternative materials', asked 'what function does this component perform and how else can we perform this function?' This innovative approach led the company to use substitute materials for many of its products. Surprisingly, they found that the cost of the product was often reduced but quality of the product improved; care and attention to function provided better value for money. (Keith Potts, Construction Cost Management)

A spin-off of this approach was known as value analysis which only eliminates the cost and did not contribute to performance. Over the next ten years this was further developed by GEC and become known as value engineering (VE). Value management developed from VE and is now a mandatory requirement on many public and private projects on the USA and Australia. (Keith Potts, Construction Cost Management)

2.12 Value Management in Construction Industry

At early 1970s, value management has been introduced and applied in the construction industry. In order to introduce and promote the implementation of value management extensively in construction industry, a training course was provided by the Bureau of Reclamation to its engineers in 1965. After that, the clause of VM was appeared in the construction contract in 1966. Soon after that year, US General Services Administration had set up a VM Program at 1969.

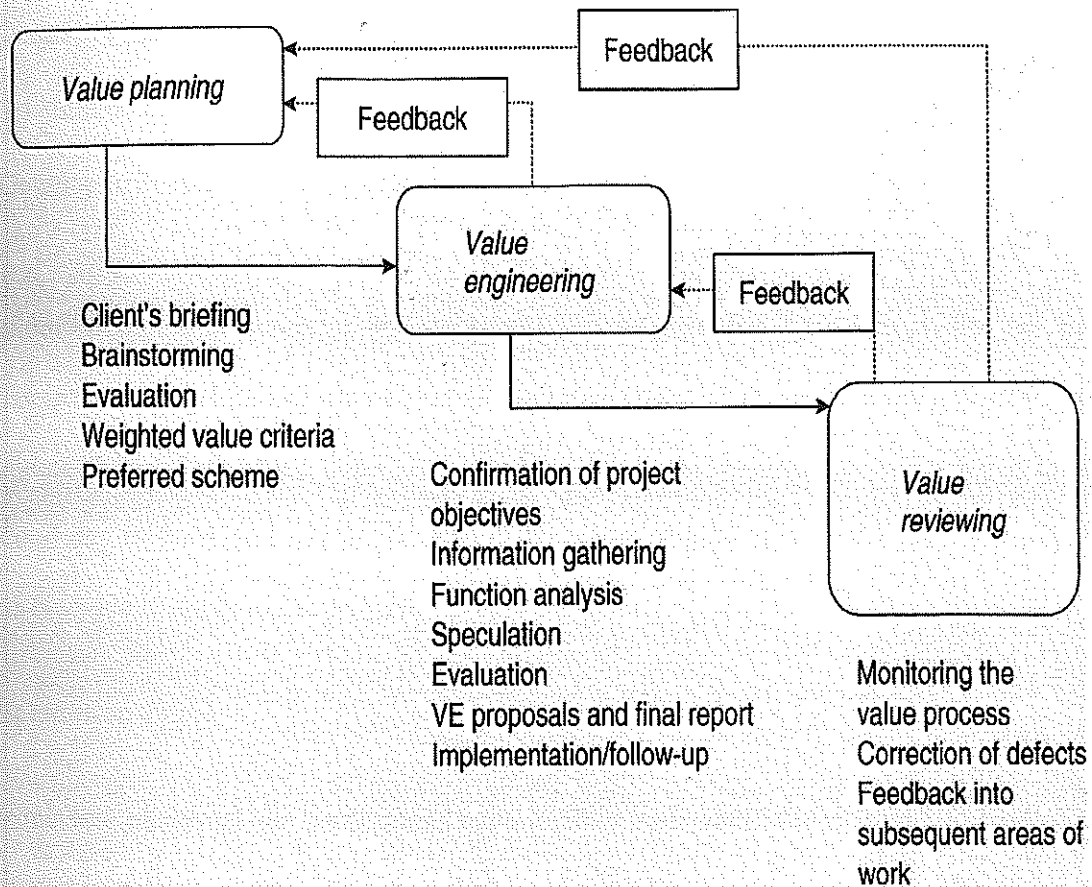
During the 12th annual conference of SAVE in 1972, the use of value management has been emphasized to the construction industry. (James J. O'Brien, 1976) Many developer and construction firms have adopted the VM approach to optimize value for money.

2.13 Value Management

Value management can be defined from different perspectives and in various ways. According to Institute of Value Management UK, VM is defined as a structured team based approach to identify functional objectives or requirements of projects to achieve optimum function for minimum Cost. Value management can also be defined as a combination of planning tools and methods to find the optimum balance of project between costs and risks.

What made Value Management distinguishes from traditional methods of review is the concept of value. By considering the relationship between function, cost, and value, it is able to achieve value for money. Value Management can also be seen as the process of planning, assessing and developing the project in order to make the right decisions about the optimized balance of project benefits, costs and risks. VM is able to set apart from other management tools due to its structured team based approach to problem solving and systematic functional analysis.

92 Key tools and techniques



7.1 The value management process (source: ICE, 1996).

Figure 2.1 The Value Management Process

2.14 The Process of Value Management

The Value Management Workshop consists of five major phases as follows:

- Information phase
- Function Analysis
- Creativity phase
- Evaluation phase
- Development phase

Generally, the value management workshop will be held for 2 to 3 days. On the first day, participants from different teams will be gathered together to analyze the information of the projects and exploring their ideas on reducing cost but achieve optimum function. On the coming second day or third day, solutions based on facts and reliability will be converged and decision will be made to apply to the project.

Information Phase

During this phase, all the participants have to fully understand the current situation of projects and widen their perspectives beyond their area of expertise. This part is so significant that the questions at the later stage such as 'what does it do and what else does it do' should be able to answer. The basic information which has to be included in this stage is as follows:

- Client needs
- Client requirement
- Project constraints
- Budgetary limits
- Time available

Function Analysis

This is the key stage of VM workshop. A wider and more comprehensive understanding of the project can be done by sharing knowledge and stimulating intensive discussion among the team members. The issues which confronting the project can be analyzed here and discuss with team members to get different perspectives of views. A function of an item may be a characteristic that make that item work or one that makes it "sell". Functions can be categorised as basic or secondary. FAST diagrams are used in the creative thinking phase. This is especially beneficial to breakdown the problems into portions which are easier to manage and identify the real problems rather than the symptoms. A disadvantage of FAST is that it takes a long time to carry out and time is usually constrained in a Value Management Workshop.

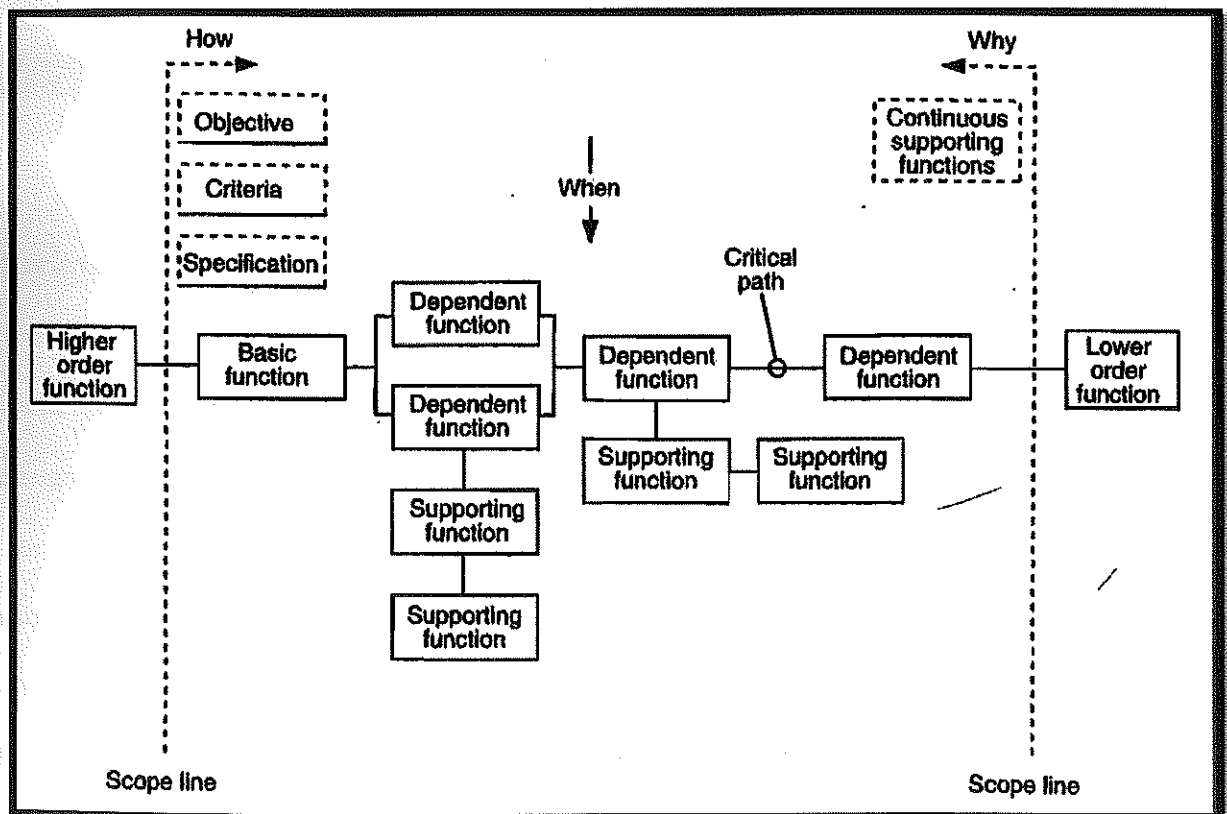


Figure 2.2 an example of FAST diagram (Norton: 1995:73)

Creativity Phase

At this stage, all the participants would have the opportunity to generate ideas for beneficial change without fear of recrimination or criticism. Unwanted functions will be eliminated and essential functions will be delivered. An abundance of ideas which generated in the previous phases regarding alternative ways to achieve functions highlighted are gathered and discuss. The facilitator plays a key role to lead and facilitate the team members to take part and contribute to the team.

Evaluation Phase

The VM team participants will jointly evaluate and prioritize the ideas which are worthwhile and able to enhance value of projects. Ideas that do not add much value the projects are rejected. Both advantages and disadvantages of the ideas generated are evaluated again so that a proposal which can be implemented to the projects can be obtained.

Development Phase

The ideas which are accepted for further development during the evaluation phase are investigated and considered in detail for their economic feasibility and technical viability. The design team will work out the outline design and cost plan for the new outline should be realized. The proposed alternative outline design must have supporting documents such as calculations, sketches, detail of description for the new design and cost or other implications. This is the critical phase of value management workshop therefore the time allocated for this phase have to be longer in order to ensure a successful outcome.

2.15 Value Management in Malaysia

According to Aini Jaapar (2006), in Southeast Asian, the concept and application of Value Management is not well embraced if compare to other developed country. Value management is first introduced in 1980's in Malaysia. However, the concept of VM has not yet become widely applied in the Malaysian construction industry despite some benefits had been observed as a results of the implementation of VM. As seen in the survey conducted by Aini Jaapar et.al (2009), 78% of the respondents have knew about value management but only 16% of them having good understanding of value management.

In fact, as Jaapar and Torrence (2006) had concluded, as compared to other developed countries who had used value management, there is a knowledge gap exists between the current development and application of VM in the Malaysian construction industry. Lack of knowledge and practice of VM and the resistance to do changes resulting from the VM workshop is posited as the reasons to the knowledge gap. In addition, according to Aini Jaapar et.al (2009), some organisations or clients in Malaysia have been applying certain aspects of the value management methodology in their project operations. Unfortunately, due to some failed outcomes from the implementation, the clients/ organisations refuse to apply it and preventing the take up of this practice. Due to the stories of past experiences by clients, they resisted to apply VM. However, the professional from construction industry had acknowledged that value management contributes a significant result to the achievement of value for money.

A positive future for value management in the Malaysian construction industry can be expected as professionals from various segments are seems ready to implement VM concepts in their future projects. (Aini Jaapar et.al 2009)

2.16 Comparison between Value Management and Value Engineering

	Value Engineering	Value Management
Definition	A systematic approach to achieve the functional balance between cost, and performance of a product	A systematic effort to add value and optimize the cost of project without sacrificing the basic requirements in order to achieve clients and stakeholder's needs
Objective	To achieve the needed requirement for minimum cost of project	To optimize the value of a project
Subjects for discussion	Existing design	Project proposal, existing design
Timing of application	During design and construction stage	From the concept to occupancy of the project
Practicing Levels	Components and element	All level
Value improving approach	Value improved by alternative design	Value improved by integrating client's objectives value criteria
Outputs of the study	Remedial proposal, alternative design solution	Project objectives, specification, alternative solution based on client's needs

Table 2. 1 Comparison Between value engineering and value management (Source: Ng Kim Lai, 2006)

2.17 Problem for Value Management Practitioners

Globalisation of industry requires the application of a combination of effective management techniques. Globalisation in all areas of industry requires drastic changes in company's strategies and operations.

With globalisation of the economy, industry in general has experienced a sharp fall in product prices. With rising input costs, it is becoming increasingly difficult for a business to achieve its desired profitability.

Value Management is an answer to this global problem. However, adoption of Value Management is not that easy. Value Management, the problem solving system has a problem of its own. The application of proposal which is the very back-bone of Value Management applications, is the problem that occurred. (Somkant L. Padhye, B.E., CVS M/s Crompton Greaves Ltd, LT Control Gear Division, India; 2000)

According to a study conducted by Hogg (1999), the most ordinary reason for lack of practice of value management among Quantity Survey practitioners is due to low demand from the clients and their reluctant to pay additional fees for the service. In their point of view, the existing services provided by QS are deemed to include the measures for optimization of money or value for money where the implementation of VM is not necessary. Value management cannot be referred as cost management services offered by QS, it can be further extend to beyond the cost itself, but rather on value for client.

Besides that, lack of time to implement is another reason to hinder the practice of VM. It is difficult to invite key parties who involved in the projects to attend the VM workshop for 2 or 3 days. (Ng, 2006) Government only carried the policy to enforced public funded projects which

exceed RM50 million to implement VM but not enforced to all the projects in the construction industry. Therefore, private sector is lack of supporting on VM as it is costly and they think that it is unnecessary.

In addition, interruption to normal work schedule is another ordinary critique on value management. The design or construction process has to be delayed due to the design team or construction team have to wait for the decision from the VM workshop.

Moreover, too expensive to carry out value management could be the barriers to VM implementation too. (Ng, 2006) Some of the consultancy firms claimed that this is not part of their service so extra charges need to be paid by clients. Because of this, some clients refuse to apply in order to save on consultancy fee despite the benefits could bring by VM is so significant.

Lastly, the Malaysian value management facilitators are still using the American VM guideline which introduced by SAVE to facilitate the VM study. There is no local guideline for VM in Malaysia. (Ng, 2006)

2.18 Future of QS in the application of Value Management

A track record of success has been established from the value management as it possesses an accurate methodology. An important opportunity is offered to the construction industry to improve the service provided to the clients. Value management must be taken as part of the process to establish client's objectives in order to addresses the real needs and add value to the projects. It is a better ways to provide the same performance but at a lower cost. The alternative solutions should always be considered to ensure its functionality and hopefully able to enhance the function. Value engineering should be the compulsory part of every projects but not just an option to the project.

Besides that, value management can be considered as a natural progression of quantity surveying profession. The integration of value management and cost control is best to implement through the project management services. In order to provide better services for clients, it is necessary to remodel the profession images into something more marketable and innovative to keep the demand from clients. (M.Saifulnizam et.al, 2011)

The key motivation of applying value management for projects is the likeliness of clients rather than innate desire on part of QS. The numbers of Government's regulation has increasing to require construction projects which exceeds RM50 millions to implement value management as part of cost measurement measure. Ineluctably, through the Economic Planning Unit (EPU), the Malaysian construction industry has published Value Management Circular 3/2009 which make all public funded construction projects which cost more than RM50 million to implement Value Management application.(Economic Planning Unit Malaysia 2009).

According to Hogg (1999), as compared to other design team member, quantity surveying profession is seen as in great position to influence Value Management application. Due to the

leading role of QS in Value Management with their knowledge base built from the specialization, it is been recognized as a natural progression for their profession. (Ellis et al. 2005) On the other hand, with the absence of full participation of cost experts especially QS, the successfulness of VM exercise cannot be guaranteed. (Kelly and Male, 2003)

Therefore, in order to feed the demand of the industry, there is an expectation towards quantity surveying profession to expand their services by offering value management. The issues face here in the industry now is what are the challenges for QS to offer VM as their new niche services? The challenge has posed several key questions which need to be considered:

- i. Are they ready to make fundamental change to the way they deal with clients?
- ii. Does current tertiary QS education offer VM courses as an elective?
- iii. What are the roles taken by professional bodies in providing training and education in VM as part of members CPD?
- iv. What are the strategies to promote VM as one of the extended QS services?

(M.Saifulnizam et.al, 2011)

In addition, many organisations do not realise the potential benefits of value & risk management and thus there may a basic awareness problem that the simple sharing of information can overcome. The others believe that the processes really do not add value.

There are also cultural elements to the situation, where the organisational structure is a vertical hierarchy type; such organisations are less likely to adopt risk and value as the processes are inherently inclusive. In such situations, external facilitators may be rejected and the training of internal facilitators is thus an important consideration in the move for change. Facilitators are in demand across the industry and every effort must be made to retain trained, able and experienced facilitators. (Alastair Bloore, Value & Risk Management on projects, the barriers of integration)

2.2 Literature Review on Research Methodology

Research Approach and Design

According to Aini Jaapar (2006), quantitative research is a formal and systematic process to describe and examine cause and effect interactions among variables. Surveys may be used for descriptive, explanatory and exploratory research. A survey is conducted to obtain original data from a population which is too large to observe directly. The people respond to a number of questions posted by the researcher is means self-report. Self-administered questionnaires will be used in this survey by personally distribute to the targeted populations.

A descriptive survey was selected for this research because it provides an accurate portrayal of the characteristics, for example opinions, abilities, and knowledge of a particular individual.

Research design is the entire process of connecting the empirical data to the conclusions of the research; starting from the problem statement until the data collection, analysis and the conclusion. The function of Figure 2.3 was to ensure that the evidence obtained by the research enabled the researcher to answer the initial question of "how and what do we learn from projects that have implemented the concept of VM?" as unambiguously as possible (de Vaus 2001).

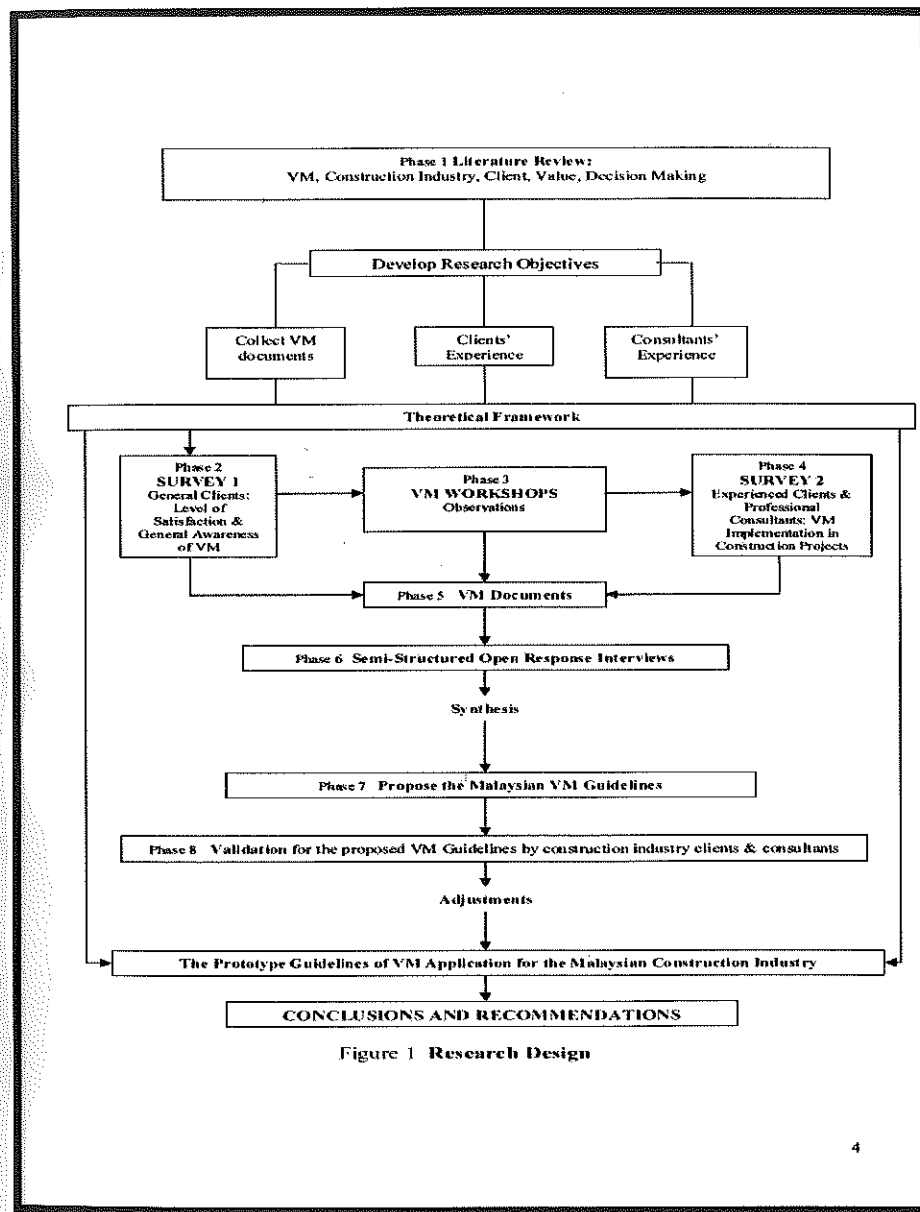


Figure 1 Research Design

Figure 2.3 Research Design (Aini Jaapar, 2006)

Sample Surveyed

According to the research carried out by Aini Jaapar (2006), sample size creates a problem with any type of design. Due to the infancy development of value management in Malaysia, it is even more crucial to ensure as much respondents as possible are being reached by researcher to ensure the validity of the survey results. It hopes to reach to those respondents who had experienced with VM implementation locally but not oversea. Based on the previous research conducted by Jaapar and Torrance (2005), the response rate received was 5% which is very low. There were some elements that were considered thoroughly during the process of deciding the sample size of the respondents. (Aini Jaapar 2006)

3.0 Proposed Research Methodology

Stage 1: Literature review

Initial literature research will review on the general Value Management development in Malaysia and the roles of Quantity Surveyor (QS) play in VM implementation. Critical literature research will focus on the challenges and barriers faced by QS to the successful use of VM in Selangor. Information will be collected from Quantity Surveyors, Books, Journal, articles, online study, and library resource.

Stage 2: Research Approach and Design

Both quantitative and qualitative approaches are followed. Why mixed methodology research is chosen is because quantitative research is explaining the challenges and barriers to value management implementation by QS firms in Selangor by collecting numerical data that are analyzed using mathematical based methods such as average index. While qualitative research can be carry out by in-depth interview with senior QS to obtain an insight into individual evaluations on barriers and challenges to value management implementation and how does value management benefit the end users. The purpose of carry out mixed methodology research is to increase the accuracy of findings.

A descriptive research design was used. A survey collect information from a sample of people by means of self-report, that is, the people respond to a series of questions posted by researcher. In this study survey method is selected and the information will be collected through self-administered online questionnaires distributed by email to the targeted respondents by researcher.