

REQUIREMENTS OF VALUE MANAGEMENT IN CONSTRUCTION SECTOR
AT MALAYSIAN AIRPORTS HOLDINGS BERHAD (MAHB)

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DEDICATION

For my family, who offered me unconditional love and support throughout the completion of this project report. To them I give all my love for supporting me all the way.

To My Lovely Mother,
Yah Binti Mat Deris,

To My Friends,

And also to My "*Sayang*".
You are the great person that I have.

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ABSTRACT

Currently, Value Management is one important tool in the construction sector. Value Management is an effective technique to obtain optimum returns on investment which is utilised in accordance with the objectives of the project. Although Value Management is still considered a new method in the construction sector in Malaysia, it has been found to be able to reduce cost by at least 10 to 30 percent. Due to the lack of understanding of Value Management by some parties, they do not apply this method in the construction sector. An effort to apply Value Management studies should be started during the early stages of the design phase, even at the initial design concept and continuing to focus on the main design where decisions must be made in advance. This research focuses on examining the level of interest in the value management in the construction sector at Malaysia Airports Holdings Berhad (MAHB) and to identify critical elements in the Value Management chain of MAHB. At same time view and strategies that need to be given to overcome the problem was also investigated. The design of the study is a quantitative approach in which questionnaires were distributed to the staff in each department in MAHB. A mean score was used to measure the level of interest in the VM in MAHB. For the analysis of the critical elements of the VM, Linear Scale Numeric methods were used. The analysis revealed the level of understanding of Value Management in MAHB is not comprehensive. The most critical phases of Value Management identified on the study at MAHB are pre-study preparation phase, speculation phase, and also the post-VM study. This study expected to benefit the parties who use Value Management tool in the construction sector to reduce operating costs but maintain optimum value.

ABSTRAK

Ketika ini, Pengurusan Nilai merupakan salah satu kaedah yang penting dalam sektor pembinaan. Pengurusan Nilai merupakan teknik yang berkesan untuk mendapatkan pulangan yang optimum dengan pelaburan kewangan yang dikeluarkan bersesuaian dengan objektif sesuatu projek. Walaupun kaedah Pengurusan Nilai dianggap masih baru dalam sektor pembinaan di Malaysia, namun ianya didapati boleh menjimatkan kos sehingga 10 hingga 30 peratus. Kurangnya pemahaman segelintir pihak tentang pengurusan nilai membuatkan mereka tidak mengaplikasi kaedah ini dalam sektor pembinaan. Usaha untuk mengaplikasikan kajian Pengurusan Nilai hendaklah bermula semasa peringkat awal fasa rekabentuk lagi iaitu rekabentuk konsep dan menumpukan kepada bidang rekabentuk utama di mana keputusan perlu dibuat lebih awal. Kajian ini memfokuskan kepada penelitian terhadap tahap pemahaman dan persepsi kakitangan Malaysian Airports Holdings Berhad (MAHB) terhadap Pengurusan Nilai dalam sektor pembinaan serta mengenal pasti elemen yang kritikal dalam Pengurusan Nilai di MAHB. Seterusnya, pandangan dan strategi perlu untuk mengatasi masalah kajian. Rekabentuk kajian adalah berbentuk pendekatan kuantitatif di mana borang kaji selidik telah diedarkan kepada kakitangan MAHB bagi setiap jabatan. Skor *mean* digunakan untuk mengukur tahap pemahaman dan persepsi kakitangan MAHB terhadap Pengurusan Nilai. Bagi menganalisis elemen kritikal dalam Pengurusan Nilai, kaedah *Numeric Linier Scale* telah digunakan. Hasil analisis menunjukkan tahap pemahaman Pengurusan Nilai kakitangan di MAHB masih lagi tidak menyeluruh. Elemen Pengurusan Nilai yang paling kritikal di MAHB adalah terdiri daripada *Pre-Study Preparation Phase*, *Speculation Phase* dan *Post VM Study*. Kajian ini dilihat akan bermanfaat kepada pihak yang menggunakan kaedah Pengurusan Nilai dalam sektor pembinaan bagi mengurangkan kos operasi tetapi mengekalkan nilai yang optimum.

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LIST OF SYMBOLS AND ABBREVIATIONS

<i>DCA</i>	–	Department of Civil Aviation
<i>FAST</i>	–	Function Analysis System Technique
<i>GLC</i>	–	Government Link Company
<i>IKRAM</i>	–	Institut Kerja Raya Malaysia
<i>IVMM</i>	–	Institute of Value Management Malaysia
<i>KLIA</i>	–	Kuala Lumpur International Airport
<i>LCC</i>	–	Life Cycle Cost
<i>MAHB</i>	–	Malaysia Airports Holdings Berhad
<i>RM</i>	–	Ringgit Malaysia
<i>RMKe10</i>	–	Rancangan Malaysia Kesepuluh
<i>SAVE</i>	–	Society of American Value Engineers
<i>SPSS</i>	–	Statistics Package for Social Science
<i>UPE,JPM</i>	–	Unit Perancang Ekonomi, Jabatan Perdana Menteri
<i>VA</i>	–	Value Analysis
<i>VE</i>	–	Value Engineering
<i>VM</i>	–	Value Management
<i>VMTC</i>	–	Value Management Team Coordinator

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Value Management is essential in the construction field. Value Management is a multifunction with the purpose to look upon the best value through the design and construction process the client demand (Jaapar, 2006; Jaapar and Torrance, 2005; Jaapar and Torrance, 2007). The goal of Value Management is to identify, prepare options and eliminate any component or cost which does not contribute to the service system and project without jeopardising the objective and function being determined.

Value Management is a multidisciplinary approach which is systematic and innovative that examines the function need of a certain design of product, service, project, facility and system in achieving greater value and optimum cost without affecting the level of performance in the programme and project. This process involves all stakeholder and related project expert by paying attention to the function, cost and quality (Unit Perancang Ekonomi, 2011). Generally, Value Management being implemented right after the design concept has been prepared. In a complex project such as hospital, airport and harbour, Value Management has to be implemented in the beginning (pre-design) and in the concept design (Unit Perancang Ekonomi, 2009).

Value Management also being known as a value analysis management or value engineering analysis. These terms has the same goal which is tactical decision being achieved by engineering application in project development and design analysis or value in order to improve the current product or activity. Nevertheless, the term being used is not important; the most important thing is to create the opportunity to increase value (Ng, 2006).

In order to ensure that the implementation expenses of a project or programme reach the value for money, government had decided that all of the projects within Rancangan Malaysia Kesepuluh (RMKe10) with the value of RM 50 million and above are strictly needed to go through the process of Value Management. The Economic Planning Unit of the Prime Ministry Department (UPE, JPM), had taken the action of selecting VM as one of the tools of programme/project planning in Rancangan Malaysia Kesepuluh by circulating Pekeliling UPE No 3, year 2009 which require all projects with the value of exceeding RM 50 million go through the process of VM. The process of Value Management involves all stakeholders to evaluate and look for the alternative with the optimum cost without jeopardizing the objective, function and project quality.

Research shows that VM give maximum benefit and cost effective if being implemented in the early stage of programme/project, where the scope definition, function and real cost can be finalized (Unit Perancang Ekonomi, 2011).

1.2 Problem Statement

In most countries, the implementation of Value Management has always been part of the construction industry. In the easiest interpretation, VM is a process to get back the maximum return for a particular project from a properly managed cost. In this matter, the return is not only in term of finance, but also the function or benefit of the project towards the end user, quality and project continuity. Value Management is the area of optimally balancing these elements.

Value Management originated from United State of America as the result of lack in the materials in the sector of manufacturing during Second World War era. Mr Lawrence Miles (Founder of Value Management, now being known as value analyst) from General Electric Company was responsible in developing this technique in the year of 1942 and from this year, it has been used in this industry. Among the country which is using this method are United Kingdom, Japan, Korea, Australia, Saudi Arabia and others (Mazlan, 2010).

In most nations, the implementation of VM has been one with the construction industry. In the easiest interpretation, VM is a process to get back the maximum return for a particular project from a properly managed cost. In this matter, the return is not only in term of finance, but also the function or benefit of the project towards the end user, quality and project continuity. Value Management tries to optimally balance these factors. In one research in 2009 related with the impact of VM execution in Malaysia showed that the construction project in this nation which implemented this concept had recorded cost saving in the beginning of the project between 10% and 30%.

The Malaysian Construction Industry contributed as much as 3.2 percent from the total of National Domestic Gross Income which constitute of RM209.27 Billion (Unit Perancang Ekonomi, 2001). The possible effect from the implementation of VM in the construction industry is the significant amount of 10 % saving which has the potential to generate the total saving of RM670 Million by using any investment with the estimated amount of RM 22 Million in this industry, by assuming that the return on the investment is 30:1 (Woodhead, 2007).

Nevertheless, our industry, including the private sector, is not easily accepting this concept in total and to institutionalize it into the system. This has to change so that the physical development of this nation is parallel with the government's transformation plan (Najib, 2011). This is due to the fact of lack in the knowledge on the implementation of VM in the construction project (Choo, 1998). In Malaysia, VM was introduced in the year of 1986 by Associate Professor Roy Barton from Canberra University, Australia to Jabatan Ukur Tanah UTM, Skudai

during his first visit in Malaysia. In 1990, Barton visited Malaysia for the second time. That visit was accompanied by Mohd Mazlan Che Mat to Petronas to introduce the concept of VM in the organization. Since VM is important in organization, Mazlan did a payback visit to Australia to look closely and in detail on the method of Value Management. While in 1999, a seminar on Value Management being conducted by IKRAM, JKR which being inaugurated by Tun Daim Zainuddin where he proposed so that the method of Value Management being implemented in construction project. In the same year, Mazlan had also conducted a seminar on the importance of Value Management to the organization in 5 states which was Penang, Johor, Kuala Lumpur, Sabah and Kuala Terengganu.

This situation showed that VM is very important in any construction project. Other than that, a few of the public universities in Malaysia started stressing on this method by offering the subject of Value Management. Among the universities which offers this subject is Universiti Sains Malaysia (USM), 1991, Universiti Teknologi Malaysia (UTM), 1993/1994, Universiti Malaya (UM), 1996, The Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA (UiTM), 1997, Universiti Islam Antarabangsa (UIA), 2000, Polytechnic, 2003 and other private institution. This also has been supported by the establishment of the Institute of Value Management of Malaysia (IVMM) on May, 2000 with 20 members. (Mazlan, 2010). Up until now, the members of IVMM is as many as 132 person (Buletin IVMM, 2011).

Value Management is very important in any building construction. Many cases which happened in the building construction project such as ceiling collapse which took place in the Court Complex of Jalan Duta in 2007. The Court Complex of Jalan Duta had been constructed with the cost of RM270 Million. This building is the second largest court complex in the world. Other than that, the ceiling collapse incident being caused by broken pipe also happened in the new government building with the cost of hundreds of millions of Ringgits such as in the Head Quarter of the Immigration Department and the Dewan Serbaguna Kementerian Pembangunan Usahawan dan Koperasi in Putrajaya which forced all of the activities in that particular office being stopped for a certain period of time (Berita Harian, 2007).

The failure in the application of Value Management in the project development could cause loss of quality in the building. More than that, building damage can happen and causing the tarnished image of the building construction project area of the nation. The carelessness could cause injury to the public. This matter should be a concern and should never being treated lightly by all party.

Even though the method of Value Management has progressed in other developing countries, it is still rare in Malaysia. A lot of organizations do not apply this method in the construction project. This is due to the lack of individual knowledge in applying Value Management. There is also less than optimum implementation in the construction project. The non optimum usage could cause the cost of construction to increase. The increase in cost could be detrimental towards the mission and objective of the organization on executing certain project without avoiding any wastage. The problem of the lack of knowledge in using this method is also one of the reasons why this method is rarely used in the construction project.

According to the previous research by Mohd Zainuddin (2000), only less than 10% of the construction firms exercising Value Management to reduce the cost. This is due to the lack of knowledge. The involved quantity surveyor firms only constitute of 15%. Most of the developer local government is still unclear with concept of Value Management. This is because they are unclear of the definition and application of Value Management.

Value Management should be done even before the tender process. Specifically, as early as the planning process so that the government and the private sector, spend their money wisely and the project can get the maximum possible return. Soon, the implementation of VM process for all related project will be a standard practise in all ministry, and with that ensuring that every Ringgit from the citizen being used optimally.

1.3 Research Questions

This study are to answer to several questions related to Value Management requirements in the construction industry in Malaysia. Referring to this, the research questions can be raised in this study are as follows:

- i) How's importance of using Value Management in the construction sector in MAHB?
- ii) What is main criteria and critical point in the use of Value Management in construction projects in MAHB?
- iii) What are the recommendations and strategies in the application of Value Management in projects Construction in Malaysia?

1.4 Research Aim and Objectives

The aim of this study is to identify the level of Value Management requirements in the Malaysian Airports Holdings Berhad. Therefore, the main objectives of this research are as follows:

- i) To identify the level of interest in the Value Management in construction sector at Malaysian Airports Holdings Berhad (MAHB).
- ii) To identify the main criteria and the critical level in the use of Value Management in construction projects in the Malaysian Airports Holdings Berhad (MAHB).
- iii) To recommend strategies in the application of Value Management in construction projects in Malaysia.

1.5 Scope of Research

The focus of research is Malaysian Airports Holdings Berhad (MAHB). This is because the area is one of Malaysia's mega projects and this is a symbol of national pride. The focus of this study includes all departments in MAHB.

1.6 Research Methodology

For the purpose of achieving the objectives, this study has used quantitative methods based on the survey forms were distributed to respondents from the all department in MAHB. The methodology of this study was divided into five main stages. Each phase carried out in stages so that objectives can be achieved with proper research. For each objective, the approach adopted to ensure that the goals each objective is achieved. The following is a brief explanation of research methodology has been implemented in this study. Further details and depth will be discussed in Chapter 3.

1.6.1 First Stage

In the first stage, theoretical framework for the whole study concept has been developed. The theoretical framework of this concept is very important to ensure that the recommendations and to identify parameters to measure the Value Management requirements in the construction industry in Malaysia. Activities at this level include identifying research questions, formulate research objectives, determine the scope of the study and identify the importance of the study. Each identified objective involves measures and specific tools for the study objectives are achieved.

1.6.2 Second Stage

The second stage covers the literature review include the concept of theoretical Value Management, Value Management procedures and implementation of Value Management. At this stage, the characteristics and management level is determined. The results obtained through the reading of literature journals management and related values. The main source is obtained mainly from Emerald journals in Sight. In addition, the books, articles, seminar papers related to Value Management is also referred too.

1.6.3 Third Stage

The objective of this stage is focused on the sample of the staff in all department in MAHB was chosen as the scope of the study. This stage involves the distribution of questionnaires to obtain information on the need and importance of Value Management in Malaysia. Through the distribution of the questionnaire, the information can be collected in the next stage is the primary data analysis.

1.6.4 Forth Stage

This stage involves the analysis process is to identify the management requirements in MAHB. The analysis method used is the frequency of Statistics (Statistical Frequency Analysis) by using the Statistical Package for Social Science (SPSS). Characteristics and criteria related to the management needs to be ranked right value for simplicity. Next, the management requirements in MAHB where the application of Value Management in the study area can be measured.

1.6.5 Fifth Stage

This final stage includes the process of writing the final report, results and findings in this study are documented in a systematic and carefully formulated. Management requirements of the implementation of Value Management in MAHB are unknown. Illustration of the overall methodology of this study is as shown in Figure 1.

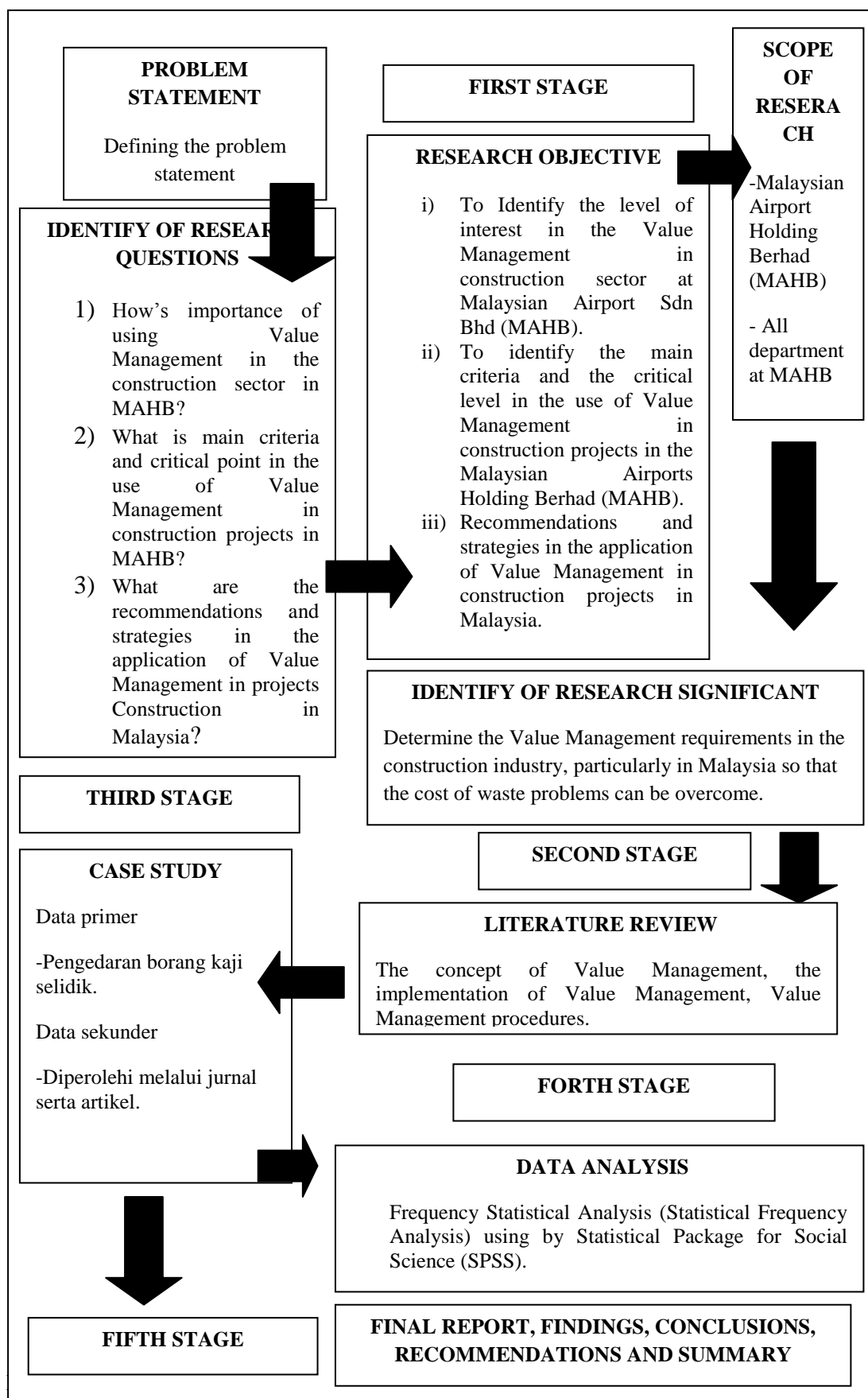


Figure 1.1: Flow chart of research methodology

This study gives importance to the parties such as:

- i) The organization in the construction industry. With the application of Value Management in construction can reduce costs but maintain quality and project performance.
- ii) Prospective contractors where possible to plan ahead for a construction project and the characteristics of the management interests.
- iii) Can provide knowledge for students about the importance of Value Management and its use in construction projects.

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