

OVERVIEW OF VALUE ENGINEERING: APPLICATION AND IMPLEMENTATION AMONG QUANTITY SURVEYORS IN CONSTRUCTION INDUSTRY WITHIN KLANG VALLEY, MALAYSIA

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ABSTRACT

Cost budgeting has always been a huge piece of work the consultant team constantly needs to work hard on, as it is always the top priority for the client to keep their construction projects or development efforts within the budget range given. In order to achieve this ambitious goal, it is found that the idea of value engineering should be adopted starting from the initial stage of the project, which is the feasibility stage, by providing a structured and systematic technique to help reduce costs, evaluate productivity, quality and a thorough value analysis towards the design of the project. By conducting this chain of analysis incorporating the idea of value engineering, the function and value of the construction then can be fully maximized to fulfil the client's desire. This study focuses on the importance of the implementation of value engineering in our country's construction industry, as it is fully believed that the potential of the adaptation of value engineering can bring to the construction industry is highly significant. Subsequently, discussing barriers that may be encountered while applying the works of value engineering in Malaysia's construction industry scene, this research strives to promote and broaden views of Malaysian on the concept of value engineering, by highlighting the benefits and its role in cost saving. Furthermore, exploring its application rate in Malaysia by conducting semi-structured interviews focusing on quantity surveyors. This study discovered that the level of VE practice in Malaysia is rather optimistic. However, the misconception of VE as a mere cost cutting tool is still an issue that needs to be corrected among the QS population especially in the private sector of the construction industry. Thus, the role of government and institutions are very crucial in influencing and promoting the right practice of value engineering among the quantity surveyors.

Key words: Value engineering, benefits, barriers, application, Malaysia

1. INTRODUCTION

Value engineering can be simplified into a concept of balancing the ratio of the value and the cost incurred and effort required to achieve it (RICS,2017). It was widely proven of the fact that various benefits could be obtained by implementing the concept of value engineering and value management throughout the process of a construction project, especially in the early stages of the project.

Value engineering goes way back to the year 1945 during the World War II period, where issues like shortages of laboured workers, raw materials and component parts often arose, which troubled the production chains of component parts during those days. This was where value analysis came into light, with the effort given by Lawrence D. Miles who worked in the purchasing department at General Electric Co. in the United States (Atabay & Galipogullari, 2013). He implemented the idea of value engineering, by practicing using alternative substitute materials for the process to carry on smoothly. While the materials shortage issue was resolved, they also discovered that the cost could be significantly reduced that way, while the quality of the product was improved and performed better, thus increasing the value of the product (Kiran, 2017).

“Value” or “worth” is the keyword of the whole idea of value engineering and value management, it can be defined as the work to determine the ratio between the benefit that can be derived from the course of efforts, and the cost needed to achieve it. The ratio contributes into determining the true worth of the integrated or creative ideas. Value engineering analyzes the value in a long run, thus sometimes it might not be able to provide the immediate effect of cost saving on the spot. This can be pictured with a simple example when a cheaper alternative equipment plant that has a shorter life expectancy is chosen as a substitute, in this case we can see that the value of the plant is reduced, as more budget and time will be wasted to replace the plant, even though the plant is cheaper.

According to RICS, value management usually takes place at the initial design stage, whereas value engineering with the same process will take place after the design has been developed to focus works like cancelling out unnecessary costs induced in the process of carrying work out, while not disturbing and degrading the outcome quality, productivity and functionality of the work which fulfills the client’s requirements, which strings in the effort of improving the benefit and cost ratio analysis, instead of blindly cutting down costs. Besides that, it is also crucial for the value engineering process to take place as early as possible, as it is shown in statistics according to RICS, that the impact of changes is usually higher in the early stages of work, which costs less to make the required changes

Besides the project’s value and cost effectiveness, value engineering proposals create more opportunity and space for more innovative and creative thinking to create more possible alternatives, which can benefit and fit into the objective drawn for the project assigned. As more space and flexibility is given for designers to think out of the box, it truly serves as an opportunity to paint the picture anew in Malaysia’s construction scene, keeping everyone not to always approach the traditional or conventional designs, which might not be always safe or most cost effective (Hooi, 2014).

2. PROBLEM STATEMENT

The main issue about the concept of value engineering in Malaysia’s construction industry always revolves around the topic of its low adoption rate. This theory can be proven by past researchers’ studies stated by Cheah & Ting (2005) that the application rate of value engineering and value management is still relatively low throughout the South East Asian construction industry scene and based on Fathoni et al (2013)’s study, 62% of the respondents neither applies value engineering nor possess any knowledge about value engineering.

Furthermore, the low level of knowledge and awareness about VE can never be left untouched as one of the main factors for low VE adoption rate in Malaysia. According to studies by Maznan et al (2012) and Kissi et al (2017), negative perceptions and reluctance of practicing VE in construction projects were due to the lack of VE knowledge.

The VM facilitator is also crucial in providing the best outcome to the client depending on his expertise knowledge in the preparation stage of works and ideas (Daddow & Skitmore, 2012). Nonetheless, according to Abdullah (2018) and Jaapar et al (2012), it was mentioned that there are issues in lack of expertise and resources regarding the VE works in the context of Malaysia’s construction industry.

It is fully believed that the potential of value engineering is vital to Malaysia’s construction industry. However, the adoption of value engineering mechanisms in addressing issues as the construction project progresses is still relatively low and inactive compared with other countries. Therefore, it is important for this research to carry out studies and find out the real common adoption rate and barriers of practicing value engineering techniques among the working quantity surveyors in Malaysia.

3. LITERATURE REVIEW

The review of past literatures was done based on the three main objectives. (1) To discover the practices of value engineering among quantity surveyors and its benefits. (2) To identify challenges faced by quantity surveyors while practicing value engineering in Malaysia. (3) To find out possible strategies in enhancing and promoting value engineering practices in Malaysia’s construction industry.

3.1 Value Engineering Practice in Public Projects

The first positive approach towards value management in Malaysia’s construction and manufacturing industry was first instigated by Tun Daim Zainuddin, Malaysia’s fourth minister of finance in the year 1999; as he started to encourage the use of VM in a national value management seminar (Che Mat, 2010). In the year 2009, it is where value management gained the greatest milestone in its development in Malaysia as the government has recognized VM by issuing the Value Management Circular 3/2009 under the effort of the Economic Planning Unit (EPU) of the Prime Minister’s Department, Malaysia with the assistance of various

organizations such as CIDB and IVMM, where all public projects above the valuation of RM 50 million will be obligated in the implementation of value management, and since then VM had been implemented in 71 public construction projects within a short time frame of February 2011 to March 2011 as mentioned in Jaapar et al 's study (2012). Ahmad (2011)'s study also confirms that the public projects adopting VM have successfully garnered a 23.53 % of savings of the total project cost.

3.2 Value Engineering Practice in Private Projects

In comparison with the public projects which have government enforcement on the mandatory implementation of value management in the projects, private construction projects are not progressing and implemented as much as compared to the public projects. Through a semi structured interview study conducted by Maznan et al. (2012), it was discovered that the perceptions of private sector's consultants generally have negative perception on VE/VM, where up to 63 percent of them perceived the VE concept as just a simple cost cutting tool.

3.3 Value Engineering Practice in GLC Projects

As for Government Linked Companies (GLC), there are a few successful testimonials such as the Malaysian Airport Holding Berhad (MAHB) and TNB. Both the companies have made VE as a mandatory exercise for projects exceeding RM300,000 and RM 10 million respectively (Che Mat, 2010). In addition, it was reviewed by the chairman of MAHB, Tan Sri Datuk Dr Aris Othman that by implementing VM in their projects, they were able to obtain savings of RM62 million in 2008, RM33 million in 2009 and RM51 million in 2010 and RM 1.5 billion in the most recent KLIA 2 project (Abdullah, 2018).

3.3 Importance of Value Engineering

By implementing the value engineering methodology, it is possible to produce a cost saving advantage of up to 30 percent of the estimated cost for a construction project, as the VM helps to enhance the quality and value of the project, thus increasing the overall satisfaction from the customer's end (Mohammadian,2019).

According to Ilayaraja and Eqyaabal (2015), there is a list of different project types with various project characteristics that requires the implementation of value engineering. As for why the use of value engineering is important in each of the project types; the reasons and rationale behind will be summarized in the table below accordingly.

Table 3.1: List of Project Types Suitable to Adopt VE

Project Types	Reasons
Costly Projects	The higher the cost the project will incur, the more the VE is required to step in and perform to help in produce cost savings
Complex Projects	By adopting another professional VE team aside from the initial project designing team, offers the client an opportunity of having another set of alternatives of experts' opinion, which is important for complex projects as it requires more opinions and technical views.
Repetitive projects	A strategic move to incorporate the use of VE in the construction projects so that it can be carried on to the other similar projects, therefore producing a larger saving of costs for all of the projects involved.
Unique Projects	VE is extra advantageous in projects inclusive of new technologies with no precedents projects that can be referred to, to obtain as much information as possible before proceeding to the construction stage.
Tight Budgeted Projects	Projects running with a tight budget often require the team to obtain the most value with the money that the client offers for the project, which is even more reason VE can be utilized to eliminate unnecessary cost and achieve the maximum value of the budget given.
Projects with Compressed Design Programs	Projects with tight programs cannot afford to waste time in mistakes that might occur such as construction delays. Thus, the VE team is important to help minimize the time wasted with a properly pre coordinated work program

With the proper execution of value engineering, it can help the client to achieve the best value of their money, by balancing between the aspects of cost, functional requirements, and the quality; the three main pillars of the concept of value. (Venkataraman and Pinto,2008). “Value engineering is a powerful approach in cost saving and quality improvement”, concluded by Rachwan et al. (2016).

In another perspective, according to Daddow and Skitmore (2012), value engineering can serve as a tool for the project’s risk assessment as in the researching stage, various alternatives will be studied and researched thoroughly to help clients in making more realistic considerations to reduce the risks involved to as little as possible.

It is clear that the work of value engineering is a multidisciplinary approach; as the process of VE progresses, this cross-functional framework involving all these teams can improve the communication and better the organization as a team; creating a closely knitted team working towards the project objectives (Venkataraman and Pinto,2008).

3.4 Challenges in Practicing Value Engineering

3.4.1 Lack of knowledge and awareness towards Value Engineering

The degree of understanding about value engineering was also investigated by the study done by Fathoni et al (2013), and it was found that the application of VE is still low with 20% of the respondents agreeing that it is due to the lack of knowledge in VE. According to Maznan et al (2012), without the right knowledge and awareness towards VE, it is fairly difficult for consultants to practice the technique correctly and effectively to obtain its optimal benefits.

3.4.2 High initial implementation cost

As listed in of the many factors that obstruct the implementation of practicing value engineering in developing countries in Kissi et al (2017)’s study, there is this understanding of by implementing VE, it will increase the initial costs incurred on the client to fund the VE team’s work. Therefore, forming a hindrance for the client to adopt VE in their projects.

3.4.3 Time Constraint

The implementation of value engineering methodology should be applied as early as possible over the course of the project stages. However, it was identified that the first key barrier in implementing is due to the need of dedicating a longer time and more effort which are contradicting client’s belief in completing the project in a shorter amount of time (Abidin, 2005). It is stated that it is possible for the allocation of time for VE/VM often will be underestimated as actually in reality the involved VE team needs a substantial amount of time (RICS, 2017).

It was concluded there is an agreement with an average score of 4.02 out of 5 from the respondents stating that the value engineering process is lengthy and time consuming as one of the negative perceptions towards VE/VM which can serve as the ultimate barrier in implementing VE in their projects (Perera et al. ,2011).

3.4.4 Lack of trained professionals

It was found that the lack of VM experts has been ranked first in obstructing the development of VE/VM in the industry (Kim et al.,2016). Besides that, the study of Zhang (2012) also shows results that the “lack of experts in VE” is one of the main difficulties of VE application with an average score of 4.01 out of 5 ranking at number three.

3.5 Strategies available in enhancing & promoting VE adoption

3.5.1 Offering of VE/VM courses in Universities

It is advisable for the universities in Malaysia no matter private or public universities institutions that they should be more open to the idea of offering a full and in-depth knowledge of course regarding value engineering. To further strengthen this strategy of offering a complete value engineering learning course in universities in Malaysia, it is suggested that professional bodies such as IVMM or PWD can step in to accredit the courses (Ramly & Shen, 2012).

3.5.2 CPD

Formal professional training programs should be part of the process of consultant professionals in enhancing their knowledge and understanding how the methodology of VE works. It is also suggested by Ramly and Shen (2012) that IVMM should take the initiative in working together with professional institutions like BQSM and IEM to incorporate VE studies into their CPD programs to provide them more exposure towards the practicality of value engineering methodology.

3.5.3 Seminar and conference discussions

The purpose of seminar and conference discussions serve the purpose of inducing interests not only from the public sector but also including the private entities; allowing them to have more chances and exposure towards the concept of value engineering and leading them to put it into common practice in the industry. (Ramly & Shen, 2012). Furthermore, the online based conferences can

increase the efficiency of the delivery process and have wider audience reach to increase the exposure towards the possible professional audience from different locations and sections of the country (Abdullah, 2018 quoted Fan et al. (2007).

3.5.4 Development of VE guidelines

Shen and Liu (2004) mentioned in their study that the lack of local guidelines about the application of VM is the key hindrance in practicing the technique in the industry. Value engineering cannot be practiced accurately and correctly solely depending on theoretical knowledge, thus the importance of development of guidelines can help promote the right application of value engineering in the industry (Kim et al., 2016). Therefore, it can be suggested that local professional institutions may work towards producing a complete guideline that caters to consultants in the private sector of the construction industry.

3.5.5 Incentive clause and procurement contract

A suitable procurement contract can greatly influence the practice of value engineering in a project, as the flexibility of the procurement method might or might not favour the application of value engineering based on different project situations (Ramly & Shen, 2012). Unfortunately, the incentive clause engaging with the implementation of VE is still absent in contracts such as the PAM 2018 contract, PWD and CIDB contracts. Thus, it is suggested to include incentive clauses in these contracts to encourage the use of VE as it shares the risks and savings among the stakeholders (Cheah and Ting, 2005).

3.5.6 Publication and promotion strategies

Aside from strengthening the knowledge input about value engineering to the community, it is also essential for the public to gain more awareness about what the practice of value engineering can provide and act as a core for a successful project. Ramly and Shen (2012) mentioned that promotional and adequate marketing strategies is considered as the best way in achieving the objective in transferring the knowledge and awareness intended to pass on to the public about VE.

3.5.7 Research and development (R&D)

The exploration will open more opportunities to develop a better mechanism and gain more benefit from the initial concept of VE (Ramly & Shen, 2012; Fong et al., 2001). The research and development can conduct studies of reference comparing the context of VE application within Malaysia with other countries assisting in enhancing the existing VE practice in the private construction projects.

4. RESEARCH METHODOLOGY

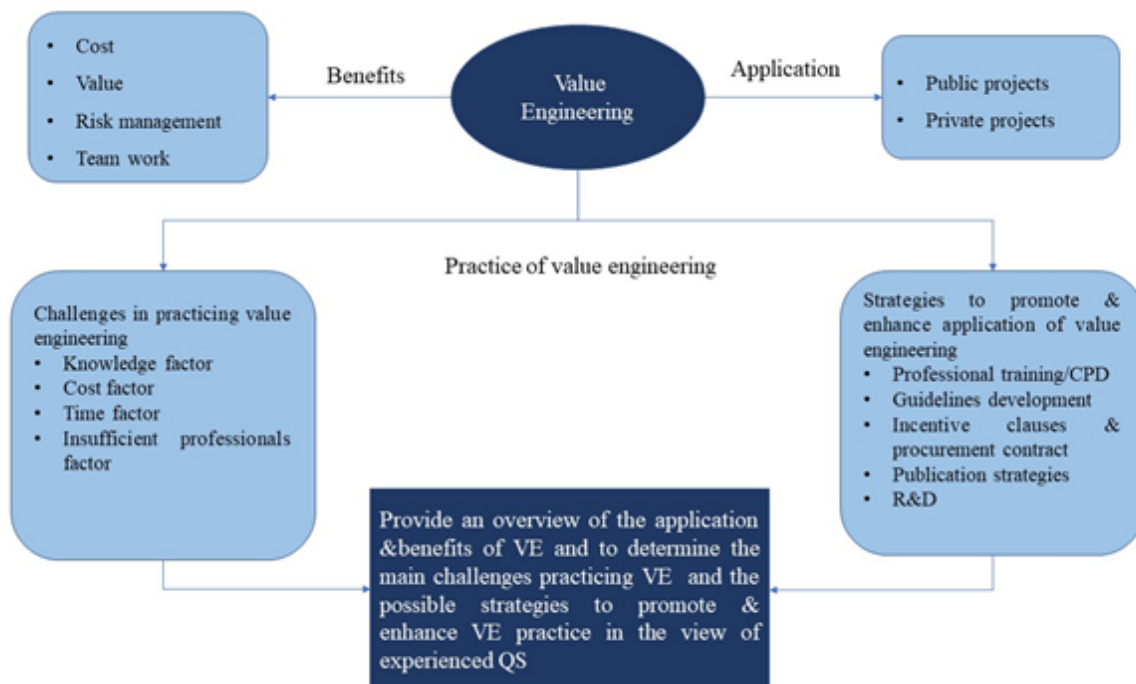


Figure 4.1: Research Conceptual Framework

4.1 Data Gathering

The data gathering method for this research study can be divided into two major groups which are the primary data playing the role of retrieving firsthand experienced data that are yet to be published and authentic (Kabir,2016). On the other hand, the second data collection method will be through secondary data involving existing resources that are available on various trusted platforms and channels.

The qualitative data collection will be adopted to acquire primary data which involves opinions and views from experienced individuals by conducting interviews with them. As it is essential for this study to gather further in-depth insights from the expert's point of view and assist in producing new possible ideas and suggestions in tackling the issues discussed which the qualitative research technique has the advantage over in providing more flexibility in data extractions from the interviewees for further data interpretation purposes (Bhandari, 2020).

The qualitative method of semi-structured interviews will be conducted with the participants which fit the criteria of the research objectives. The method of semi-structured interview will be adopted, as the pre-constructed list of questions will be able to serve as a basis to guide the order and flow of the interview session to smoothly cover the topics within the conversation. Given with the fact that a semi-structured interview provides a guide for the researcher to follow during the interview; it is highly suitable for situations where the interview is a onetime opportunity and will be repetitive conducted with other participants, as it can avoid the researcher from missing key topics that are meant to be discussed during the interview (Kabir,2016; Bernard,1988).

The pre-structured interview question list consists of four parts; part 1 will collect some background information about the interviewee, part 2 to part 4 covering questions related to the three main objective of the research respectively; covering areas from the level of practice, challenges, and strategies regarding the implementation of value engineering in the construction industry from the QS point of view.

4.2 Content Analysis

In order to execute the process of data reduction and data display, content analysis is necessary to break down the longwinded transcribed data into parts that are essential and important to the research objectives. Typically, the content analysis works with the main idea of quantifying the occurrence of certain important keywords or phrases and categorizing them into the designated theme and topics (Luo,2019).

4.3 Conceptual Analysis and Coding

Conceptual analysis involves coding the texts into categories which are often decided to be focused on by the researcher. The conceptual analysis relies heavily on the method of coding the transcribed texts and categorizing them into different codes or themes mainly based on the points from literature review done previously and new points added by the respondents. By doing so, the long list of collected data can be reduced into specific coded categories to ease the process of noticing a certain pattern which can implicate the research questions. The methods of coding the transcripts were based on the eight category coding steps indicated by Carley (1992) indicated as follow:

- (a) Decide the level of analysis
- (b) Decide how many concepts to code for
- (c) Decide whether to code for existence or frequency of a concept
- (d) Decide on how you will distinguish among concepts
- (e) Develop rules for coding your texts
- (f) Decide what to do with irrelevant concepts
- (g) Code the texts
- (h) Analyze results

4.4 Target Population

In this case, the interview most preferably targets quantity surveyors who are experienced in the field of value engineering works in construction projects, in the region of Klang Valley, Malaysia.

As shown in the table 4.1, it can be summarized that the list of respondents all possessed working experience in the quantity surveying field with a range of minimum 12 years to 35 years. All the respondents also have past experiences in value engineering works from their past construction projects and are knowledgeable in the relevant VE topic which serves the purpose of extracting their opinions based on their past experiences with VE and able to provide insight as to how the private sector view the importance and the practice of VE, in order to find out the barriers and possible improvements needed for the VE use among the QS population.

Table 4.1: List of respondent profiles

Respondents	Job title	Qualification Background	Working Experience
R1	Project Manager	QS Bachelor's Degree	12 Years
R2	Senior Project Executive	MBA, Engineering Bachelor's Degree	11 Years
R3	Director	CQS	35 Years
R4	Technical Director	PQS	12 Years
R5	QS Manager	Diploma in QS	26 Years

5. FINDINGS

5.1 Value Engineering Practice in Private Projects

It can be summarized that the collected data from the respondents, value engineering is frequently practiced whether on a voluntary basis or on the client's request. Aside from that, one of the respondents reveals that the implementation of VE is dependent on the type of projects involved; mentioning development projects such as commercial buildings, airports and hospitals which will be possessed by the client even after the construction is completed, and also civil structures projects that require maintenance concerns will most likely practice VE; which is in line with Ilayaraja and Eqyaabal (2015)'s finding summarizing a list of certain project types that are suitable for VE implementation. Whereas, one of the respondents declares that VE is already part of the mandatory steps to practice in the projects, as it is considered part of his job scope.

Value engineering is normally practiced for the sake of controlling the project to be within budget and maximising the profit made from the project for the client. It can be understood that both budget control and profit making are highly dependable on each other, as the work of completing the project within budget is highly significant in ensuring whether the project is profitable or not and preventing issues of cost overrun, especially in the private sector.

It is found from the collected data that 4 out of 5 of the respondents have agreed that value engineering should be done prior to the construction stage which can be during the design and tender stage to achieve its optimum results. However, it was also revealed that VE is often carried out during the construction stage when situations where overrun of budget or other unforeseen circumstances occurs.

All five respondents have described the process how normally VE is practiced and the answer were all similarly falls under the category of having a discussing or brainstorming session among the consultant team. It can be deduced that the VE in private projects might not be conducted fully according to the full VE workshop protocol, but they are still aware of how important the brainstorming sessions within the multidisciplinary team works in order to carry out VE works.

5.2 Significance of Value Engineering

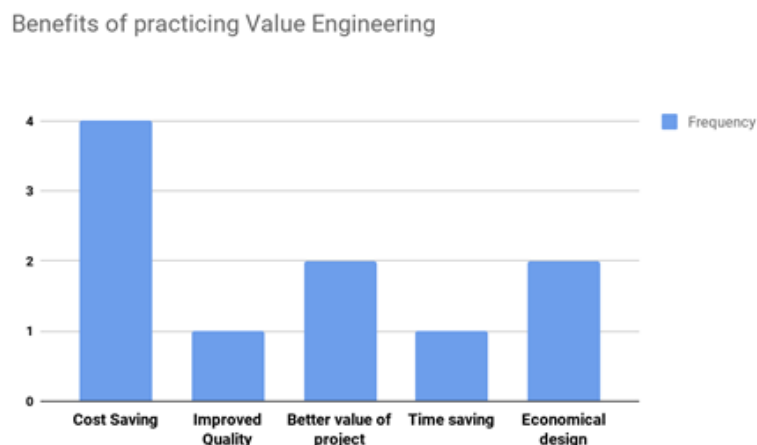


Figure 5.1

It is reasonable that cost saving is recognized as the most significant benefit by the respondents, this can be explained in our understanding that it is common practice of clients to request quantity surveyors to prioritize on achieving cost effectiveness and budget control in a construction project, due to the fact that the profitability of a project is often highly prioritized in the clients' point of view.

The benefit of saving time by practicing VE was not mentioned as much compared to other benefits as mentioned above, this might be due to the perception that more time will be allocated to conduct brainstorming and discussing sessions between different parties. The process might be lengthier compared to projects which do not go through the VE process prior to the construction stage.

Improved quality is easily labelled equivalent to higher costs incurred on the project, it can be believed that it is common practice that between cost and quality, cost will most likely be prioritized and it might be difficult to balance between the cost and quality of the project, leading to the common result of only achieving the bare minimum standard of quality; in other words, most of the time quality will be compromised.

5.3 Challenges in Practicing Value Engineering

According to the response from the fellow respondents, it can be deduced that the level of VE knowledge among QS is not as low as it seems, they all are equipped with basic knowledge about VE and are aware of the existence of VE at least. The only issue from this is that their knowledge towards VE often consists of a huge misconception towards VE.

Besides that, without the correct and full set of VE knowledge; it might be a hindrance for the QS to truly practice VE in its full potential freely. The reliance on other parties' inputs goes higher if the level of VE knowledge is low as a QS needs sufficient inputs and skills sets to be able to make the right and most suitable judgement based on the different situations and project nature.

The lack of trained VE professionals was discussed with the respondents as one of the main challenges in practicing VE. Without the sufficient amount of training and knowledge input, the pricing accuracy, judgement and decision made can affect the overall VE performance if done without trained VE professionals, this further proves that this forms a major barrier in practicing VE affecting the quality of VE proposals.

5.4 Possible Strategies

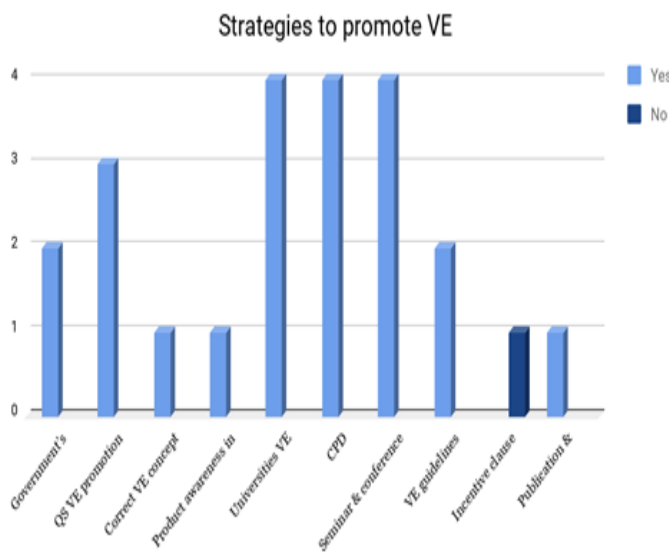


Figure 5.2

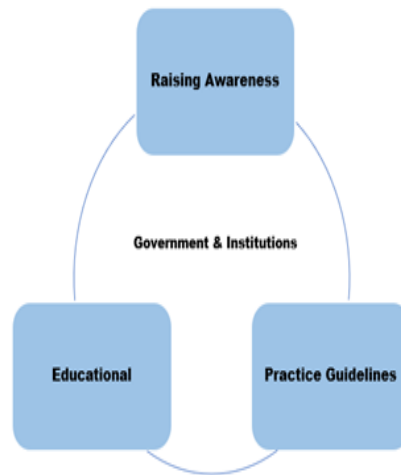


Figure 5.3

Based on figure 5.2, it is discovered that strategies such as offering VE courses in universities, providing Continuous Professional Development (CPD) and holding VE related seminar conferences were the most preferred strategies in promoting the implementation of VE. These top three recommended strategies all serve the purpose of combating barriers such as the lack of VE knowledge among QS and the lack of trained VE professionals, assisting them to learn more about how the concept of VE truly means and putting it to practice by instigating the right concept of VE and placing the importance on product knowledge in the current market as well.

In addition, the respondents also mentioned the importance of government's influence is crucial to enforce a proper set of VE guidelines that cater to the different project types in the private construction industry.

According to the respondents, the role of a QS to promote and be vocal about practicing VE has been useful dealing with situations where the clients have no VE knowledge, most of them accept the suggestions of QS to implement after learning about the benefit that it brings on board to the project.

In summary, the figure 5.4 as shown below illustrates the proposed strategy framework; outlining the significance of raising awareness, educational input and developing practice guidelines to improve the VE practice in the private sector of the construction industry.

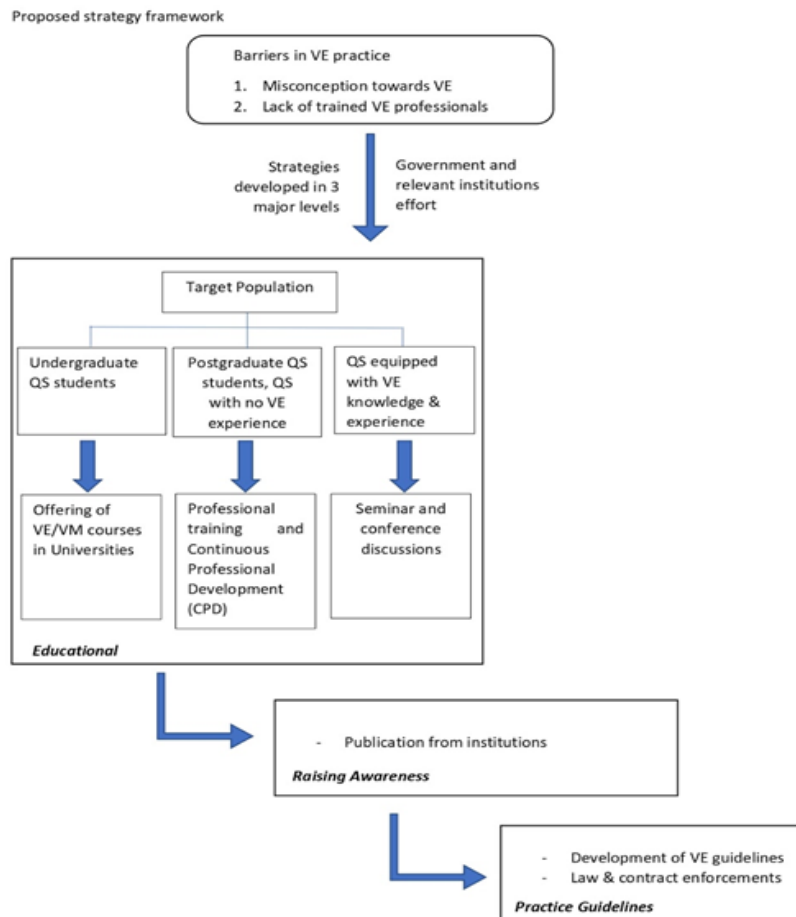


Figure 5.4: Proposed strategy framework

6. LIMITATIONS OF STUDY

The major limitation of this research study is the reach to the original target population of this study which are the experts in value engineering. Due to the limitation in my contacts and network, on top of that; the resurgence of covid-19 clusters causing CMCO to be implemented by the government directly causing difficulties in contacting the targeted population and scheduling interviews with them. In addition, five respondents were interviewed for this research study, this could be a factor of affecting the accuracy of the findings based on the limited number of respondents out of the overall population in the construction industry. A wider scope of respondents should be included in order to generalize this study results appropriately based on the QS population in Klang Valley, Malaysia.

7. RECOMMENDATION FOR FUTURE STUDIES

In order to explore on the topic of value engineering practice in the context of Malaysia, it would be interesting for future studies to focus the topic from the point of view of the contractors, where it is also common practice for contractors to provide their input in VE proposals; as contractors are normally equipped with more practical construction knowledge with the balance of design,

cost and buildability. Contractors are also responsible in providing alternative proposals for clients especially in design and build projects, where their inputs are very crucial towards the project value.

On the other hand, a research study held towards the institutions such as IVMM, BQSM and RICS is highly encouraged as well to discover more on their views on the challenges in promoting value engineering. It would also be useful to learn more about the strategies and promotion methods that they have carried out to assess their effectiveness in increasing VE practice especially in the context of the private sector.

8. CONCLUSION

This research study is significant with the fact that it is providing an overview of value engineering, discussing aspects such as its methodology in detail and also exploring its potential that it can offer to Malaysia's construction industry, if adopted accurately. On top of that, this study also strives to find out the real current application and their views of value engineering within working class quantity surveyors in the Klang Valley region. By conducting interviews with experienced value managers, it is a given opportunity as well to obtain more perspectives and in-depth knowledge about value engineering from them. Subsequently, helping the industry to promote works consisting of value engineering in a more effective way, where it can reach and spread to many more in the construction industry.

Value engineering is an essential technique where all quantity surveyors should be equipped with to increase the individual's competitiveness and capabilities; where in most cases QS are required to lead the VE study as costing is the major concern and responsibility of a QS among the consultation team. The major misconception of VE and cost cutting must be corrected to promote the right mindset of QS towards VE and the importance of "value" in a construction project. This can be achieved if more efforts and influence are given by the government towards the private sector of the construction industry. The development of VE is rather optimistic in Malaysia's construction scene and still at the developing stage where more efforts are needed from the government to enter into a mature stage.

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