

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

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**ABSTRACT** Malaysian government has realized that it is a must to modernize the Malaysian construction industry to keep in line with the modern technology such is BIM (Building Information Modelling) or knowledge such as value management. It 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). [1] 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.

**Keywords:** Barriers and Challenges, Quantity Surveying, Consultancy Firms, Selangor

### **1. INTRODUCTION**

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.

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. [1]

However, after the economic depression in July 1997, there are lots of constructions projects have been hold or abandoned due to the economic crisis. The other problem arising from the economic crisis is the contractors and consultancy firms did not have the ability to reduce construction cost, enhance its functions and reduce the construction period [2].

As a result, government of Malaysia has realized that it is a must to modernize the Malaysian 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) [3]. The earlier stage the value management applied, the higher the potential to develop.

## **2. LITERATURE REVIEW**

The literature review in this research is divided into several parts; however, only four parts will be discussed here. They are the definition of value management, value management in Malaysia, problems for value management practitioners, and the future of QS in the application of value management.

### **2.1 Value Management**

Value management (VM) 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.

### **2.2 Value Management in Malaysia**

According to AiniJaapar [4], 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 AiniJaapar et.al [5], 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 [6] 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 AiniJaapar et.al [5], 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 [5].

### **2.3 Problems 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 lack of implementation of proposal which is the very back-bone of Value Management applications, is the problem that occurred [7].

According to a study conducted by Hogg [8], 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[8].

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 [2]. 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 [9]. 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[2].

Moreover, too expensive to carry out value management could be the barriers to VM implementation too [2]. 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[2]. Even though guideline for been established by JKR Malaysia, however it is not well known by everyone yet.

## **2.4 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 [1].

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 [19].

According to Hogg [8], 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[10]. On the other hand, with the absence of full participation of cost experts especially QS, the successfulness of VM exercise cannot be guaranteed [11].

## **2.5 Research Questions**

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? [1]

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 [12].

### **3. RESEARCH METHODOLOGY**

Qualitative and quantitative research methods are used. 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 analysed 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.

The sampling frame for this research is QS firms in Selangor because Selangor has the largest economy in terms of Gross Domestic Products (GDP) in 2014. Besides that, its location is easily accessible from Nilai if compare to other states.

Stratified sampling is applied where the QS firms are divided into four strata, which are sole proprietor, partnership, body corporate and disciplinary practice. Total 116 numbers of consultancy firms are identified by using random number generator. There are 35 respondents responded the online survey. One lecturer from public university and two firm directors were interviewed to obtain further information and validate the feedback from online survey.

Descriptive data analysis is applied and the data collected are tested by rank correlation analysis and two independent samples means T test. The figure 3.1 shows the roadmap of research methodology used in this research.

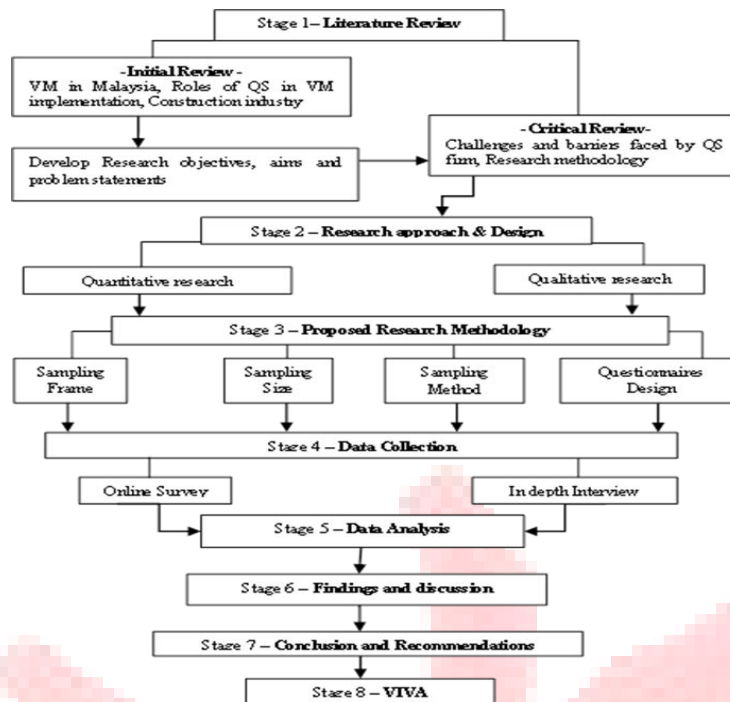


Figure 3.1 Research Methodology Roadmap

#### 4. ANALYSIS & FINDINGS

The findings of this study can be summarized as follows:

##### 4.1 Degree of understanding on value management

From the data collected through online survey, the mean index of degree of understanding on value management is 3.37/5. There are 51.43% of respondents showing good understanding on value management. This means that the degree of understanding on value management by respondents was at the average level. This results represents a fairly degree of knowledge that was expected, but it should be understand that the results might be a litter higher than the actual situation in construction field as most targeted respondents are not responding to the online survey therefore it might be able to assume that those who never respond might not know about value management. As seen in the survey conducted by Aini et al [5], only 16% of respondents have good understanding on VM.

##### 4.2 Barriers to value management implementation (Overall)

Based on the results collected from online questionnaire, Table 4.1 clearly shows the respondents' opinions on the factors which hinder the implementation of value management by Quantity Surveyor consultancy in Selangor. Total 8 barriers were identified and among these barriers, the key barrier which has the greatest value of average index of 3.94 is lack of knowledge and practice in value management.

In fact, 'lack of knowledge and practice in value management' is the expected answer from the respondents who rarely or never carries out any value management application in their organization [2].

On the other hand, those who had experience or have good knowledge on value management process also agreed that this is the reason why value management is rarely practice in the construction industry.

According to SrUng Chin Teong , “Lack of trained professionals in Value Management” is the second critical factor with average index of 3.83 which hinders value management from implementation. According to Aini et al. [5], the professionals who undertake on formal value management are very low. However, a lots of QS consultancy knew about value management but they are lack of training as training courses and the references books only focus on the methodology or theories parts while it provide little information on how to implement it. The skill of implementation need experienced seniors to teach and it is mainly focus on ‘people skill’. Juniors QS need to observe how seniors Qs implement it and learn from them.

In addition, lack of local guidelines and information about value management is also another major factor which hinders the application of value management with average index of 3.63. According to Ng, American VM Guideline is still using by Malaysian VM facilitator to facilitate VM study. Even though Institute of Value Management Malaysia was established in 2000 with help and encouragement from government agencies such as Professional Services and Development Corporation (PSDC), it is not well known by every party in the construction industry. It is confirmed by the analysis on table 4.2 which shows the degree of understanding on value management is only 3.37 which can be considered as average.

Moreover, the fourth critical factor is conflict of objectives by different project stake holders with average index of 3.57. It is followed by lack of training opportunities in value management with average index of 3.54 and interruption to normal work schedule and with average index of 3.43.

Except for not suitable for low cost project with average index of 3.20 and the least average index of 2.97 goes to this factor: too expensive to carry out Value Management. From the data above, it can be seen that the factors which resist the implementation of value management is regardless of size or value of projects. Besides that, it also suggests that money is not the barrier to implement VM since the cost saving after value management application is significant[2].

**Table 4.1 Barriers which hinder the application of value management**

| Factors   | 1<br>Strongly<br>Disagree | 2<br>Disagree  | 3<br>Neutral   | 4<br>Agree     | 5<br>Strongly<br>Agree | Average<br>Index | Results<br>(Rank) |
|---|---------------------------|----------------|----------------|----------------|------------------------|------------------|-------------------|
| <b>a) Lack of local guidelines&amp; info about Value Management</b> | 0<br>(0.00%)              | 4<br>(11.43%)  | 7<br>(20.00%)  | 22<br>(62.86%) | 2<br>(5.71%)           | 3.63 /<br>5      | 3                 |
| <b>b) Lack of knowledge &amp; practice in Value Management</b>      | 0<br>(0.00%)              | 1<br>(2.86%)   | 4<br>(11.43%)  | 26<br>(74.29%) | 4<br>(11.43%)          | 3.94 /<br>5      | 1                 |
| <b>c) Interruption to normal work schedule</b>                      | 0<br>(0.00%)              | 9<br>(25.71%)  | 8<br>(22.86%)  | 12<br>(34.29%) | 6<br>(17.14%)          | 3.43 /<br>5      | 6                 |
| <b>d) Too expensive to carry out Value Management</b>               | 0<br>(0.00%)              | 13<br>(37.14%) | 12<br>(34.29%) | 8<br>(22.86%)  | 2<br>(5.71%)           | 2.97 /<br>5      | 8                 |
| <b>e) Conflict of objectives by different project stake holders</b> | 0<br>(0.00%)              | 4<br>(11.43%)  | 9<br>(25.71%)  | 20<br>(57.14%) | 2<br>(5.71%)           | 3.57 /<br>5      | 4                 |
| <b>f) Not suitable for low cost project</b>                         | 1<br>(2.86%)              | 5<br>(14.29%)  | 16<br>(45.71%) | 12<br>(34.29%) | 1<br>(2.86%)           | 3.20 /<br>5      | 7                 |
| <b>g) Lack of trained professionals in Value Management</b>         | 0<br>(0.00%)              | 1<br>(2.86%)   | 8<br>(22.86%)  | 22<br>(62.86%) | 4<br>(11.43%)          | 3.83 /<br>5      | 2                 |
| <b>h) Lack of training opportunities in Value Management</b>        | 0<br>(0.00%)              | 4<br>(11.43%)  | 10<br>(28.57%) | 19<br>(54.29%) | 2<br>(5.71%)           | 3.54 /<br>5      | 5                 |

### 4.3 Barriers to VM implementation for each stratum

Further analysis is conducted for the barriers which hinder the implementation of VM for each stratum. Comparisons between strata are excluded disciplinary practice as there is no response from this type of firm.

According to Table 4.2, the top 3 rankings of barriers to value management implementation for different strata are clearly demonstrated. Generally, there are not much different for the top 3 rankings of barriers. The overall online survey results are exactly the same as the results of sole proprietor. For partnership and body corporate, there are few barriers ranked at the same positions.

For the ranking number 1, all of the strata having Lack of knowledge and practice in Value Management as their key barriers except for body corporate. In fact, the ranking number 1 for body corporate is lack of trained professionals in Value Management.

Whereas for ranking number 2, again except for body corporate, the barriers ranked at 2 is lack of trained professionals in Value Management. However, for partnership, beside the barrier aforesaid, there is another two barriers ranked at number 2. They are lack of local guideline and information about Value Management, and interruption to normal work schedule. Besides that, the barriers that ranked at number 2 for body corporate are lack of knowledge and practice in Value Management, and conflict of objectives by different project stake holders.



As a whole, from the two independent samples means T test, it can be observed that there is not much difference between the strata as the entire null hypotheses have been rejected. The remedies for the barriers can be the same for the entire strata.

**Table 4.2 Comparison of barriers between strata**

| <b>Top 3 Barriers</b> | <b>Overall</b>  | <b>Sole Proprietor</b>  | <b>Partnership</b>   | <b>Body Corporate</b>   |
|-----------------------|---|---|--|---|
| 1                     | Lack of knowledge & practice in Value Management                  | Lack of knowledge & practice in Value Management                  | Lack of knowledge & practice in Value Management   | Lack of trained professionals in Value Management   |
| 2                     | Lack of trained professionals in Value Management                 | Lack of trained professionals in Value Management                 | Lack of local guidelines & information about Value Management; Interruption to normal work schedule; Lack of trained professionals in Value Management | Lack of knowledge & practice in Value Management; Conflict of objectives by different project stake holders |
| 3                     | Lack of local guidelines & and information about Value Management | Lack of local guidelines & and information about Value Management |  |   |

#### **4.4 Challenges to VM implementation**

Barriers create challenges, and challenges create opportunity. From the barriers identified aforesaid, there are some remedies or strategies to overcome it. Based on the survey conducted, there are some opinions given by respondents on the strategies to encourage the respondent’s organization to implement value management.

Firstly, clients have to get staff to understand value management by providing training pertaining on value management. Most of the QS have no experience or lack of practice on value management. Therefore, clients need to provide training and try to implement in every project whenever possible.

Besides that, Quantity Surveyors have to highlight the potential of cost cutting by using value management and its functional enhancement to client. Quantity surveyor could try to convince the client focus on the value of project instead of budget.

In addition, QS himself must have the spirit of commitment and passionate to do best for the project. Employee have to change their mind-sets and encourage themselves to exceed client’s expectation. Motivation is very important here.

In terms of strategies to create awareness of value management to Malaysian construction industry, government bodies and professional body establishments such as Royal Institute of Surveyors Malaysia (RISM), Board of Surveyors Malaysia (BQSM), and Institute of Value Management Malaysia (IVMM) should held more seminars, training or workshop on value management in order to get all the parties such as QS who involve in construction industry to understand and know how it works and its benefits.

Besides that, information and reference materials on value management should be made freely accessible by players in the industry such as IVMM. By making it freely accessible, quantity surveyors can easily access those information and study it. Therefore, it can indirectly increase the degree of understanding on value management among the QS.

On the other hand, clients should provide additional fees to consultancy firms as value management could be considered as a new scope of work for them. Supports have to be given to them from the institute and management team.

Furthermore, government bodies and professional body establishments can provide incentive, rewards or rating to organization who had implemented value management. This can enforce organization to implement value management to their projects.

In addition, client can make value management as part or partial requirement of design development. It is good to start from a small task or project to increase the interest of people to apply value management.

#### **4.5 Statistical Analysis**

Further analysis is conducted using the software, Statdisk. There are two t-tests carried out to analyse the feedback for barriers which hinder the application of VM, which are rank correlation test and hypothesis test.

##### **4.5.1 Rank Correlation Test**

Rank correlation test is conducted to test the correlation between the barriers of each stratum. The significance value,  $\alpha$  used is 0.05. Table 4.2 shows the actual rank of each success criterion, which is the input for the test. The results for the test are shown in Table 4.3.

**Table 4.3: Input of Rank Correlation Test**

| Barriers | Sole Proprietor (A) | Partnership (B) | Body Corporate (C) | Interview survey (E) |
|----------|---------------------|-----------------|--------------------|----------------------|
| C.1(a)   | 3.00                | 3.00            | 6.00               | 3.00                 |
| C.1 (b)  | 1.00                | 1.00            | 2.00               | 1.00                 |
| C.1 (c)  | 6.00                | 3.00            | 4.00               | 3.00                 |
| C.1 (d)  | 7.00                | 7.00            | 8.00               | 8.00                 |
| C.1 (e)  | 4.00                | 8.00            | 2.00               | 3.00                 |
| C.1 (f)  | 8.00                | 6.00            | 7.00               | 7.00                 |
| C.1 (g)  | 2.00                | 3.00            | 1.00               | 2.00                 |
| C.1 (h)  | 5.00                | 1.00            | 4.00               | 3.00                 |

**Table 4.4: Output of Rank Correlation Test**

| Strata              | $\alpha = 0.05$                          | Correlation Coef, r |
|---------------------|--|---------------------|
| A vs B              | Fail to reject $H_0$<br>(no correlation) | 0.4910              |
| A vs C              | Reject $H_0$<br>(has correlation)        | 0.7711              |
| B vs C              | Fail to reject $H_0$<br>(no correlation) | 0.3106              |
| Online vs Interview | Reject $H_0$<br>(has correlation)        | 0.9386              |

The null hypothesis,  $H_0$  is the barriers which hinder the VM implementation of two strata are not ranked correlated. When the evidence provided has failed to reject  $H_0$ , it shows that the barriers which hinder the VM implementation of two strata are not rank correlated. When the evidence provided is sufficient to reject  $H_0$ , it means the barriers which hinder the VM implementation of two strata are rank correlated.

From the rank correlation analysis that had been carried out as shown in Table 4.3 and Table 4.4, it showed that all of the strata have to take into consideration while conducting a survey since only strata A and C showed a strong correlation. To ensure the validity and accuracy of results, all strata have to be included in the survey.

However, by comparing the findings between online survey and interview survey, either one of these can be wiped out from the survey because both strata are showing a strong correlation between them. Since both of the results are strongly correlated, only one group of strata (either online survey or interview survey) is needed in the survey to save time and cost when conducting survey on the same population.

4.5.2 Hypothesis Test – Two independent samples

Hypothesis test is conducted to test the differences between the mean of two strata for the significant differences of barriers. A null hypothesis and an alternative hypothesis need to be stated before the hypothesis test is carried on.

A claim that population mean 1 is not equal to population mean 2 ( $\mu_1 \neq \mu_2$ ) will be the alternative hypotheses for this research.

**Table 4.5: Input of Hypothesis Test**

| Strata             | A       | B       | C       | Online Survey | Interview Survey |
|--------------------|---------|---------|---------|---------------|------------------|
| Sample size, n     | 15      | 7       | 12      | 32            | 3                |
| Mean               | 3.48375 | 3.49875 | 3.60500 | 3.535         | 3.29             |
| Standard Deviation | 0.32169 | 0.20053 | 0.39464 | 0.29233       | 0.60219          |

**Table 4.6: Output of Hypothesis Test**

| Strata              | $\alpha = 0.05$                      |
|---------------------|--------------------------------------|
| A vs B              | Fail to reject $H_0$ (No difference) |
| A vs C              | Fail to reject $H_0$ (No difference) |
| B vs C              | Fail to reject $H_0$ (No difference) |
| Online vs Interview | Fail to reject $H_0$ (No difference) |

From the Hypothesis test for two independent samples means T test that has been carry as shown in Table 4.5 and Table 4.6,with the significant level of 0.05 and alternative hypothesis of population mean 1 not equal to population mean 2; it can be concluded that all the samples means showed no different between them. All of the results had shown that the null hypothesis are failed to reject and samples do not provide enough evidence to support the claim:  $\mu_1 \neq \mu_2$ .

Therefore, the remedies to overcome the barriers could be the same as they have no different between them.

**5 CONCLUSION AND RECOMMENDATIONS**

It is important to identify the barriers which hinder the implementation of VM. In this research, the key barriers are lack of knowledge and practice in VM, lack of trained professional in VM, and lack of local guideline and information about VM. T test and rank correlation analysis proved the online survey results is supported by interview survey.

The remedies plan or strategies to overcome the barriers can be the same for all the strata as T test had proved the strata have no different. Below are some recommendations to increase the awareness or to increase the practice of value management in the Malaysian construction industry:

- ❖ Clients have to get staff to understand value management by providing training pertaining on value management

- ❖ Government bodies and professional body establishments such as RISM, BQSM and IVMM should held more seminars or workshop on value management to get all parties to understand how it works and the benefits bring by value management.
- ❖ Information and reference materials on value management should make freely accessible by players in the construction industry.

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