MINIMIZING THE FACTORS HINDERING THE PRACTICE OF VALUE MANAGEMENT IN THE NIGERIAN CONSTRUCTION INDUSTRY

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Abstract: Today, Value Management (VM) is a well-kown practice, which is almost deemed to be part of the construction process in certain developed countries in the world, aimed towards achieving value for the clients, but yet Value Management seems to be a non-starter in the Nigerian Construction Industry (NCI). Previous studies have identified the factors hindering the adoption of Value Management techniques in the Nigerian Construction Industry. So, this research is aimed at identifying and proffering solutions and/or ways to minimise these constraints and eventually facilitate the adoption of Value Mnagement technique in the Nigerian Construction Industry. To achieve this, a questionnaire was designed and distributed to 80 construction professionals in Abuja, Kaduna and Kano states. The construction professionals suggested ways towards minimizing these constraints. The suggestions/solutions were grouped into five categories as related to : (1) Professionals and Professional Bodies ; (2) Government ; (3) Clients and the Community ; (4) Materials and resources ; and (5) Construction Methodology

Index Terms— Client Value, Constraints, Nigerian Construction Industry, Solutions, Value Management.

I. INTRODUCTION

Internationally, VM has been recognized as an emerging paradigm that focuses on continuously increasing the value provided to the client and is widely accepted as an important tool in recent management of construction projects (Ellis, Wood et al. 2005). VM is also critical to the success of projects as it provides a basis for improving value for money in construction (Ashworth & Hogg 2000). It also focuses on value rather than cost and seeks to achieve an optimal balance between time, cost and quality (Kelly, Male et al. 2004) as it provides a method of integration in the building process that no other management structure in construction can provide (Kelly & Male 1991). Today, VM is a well-known practice, which is almost deemed to be part of the construction process in certain other developed countries like the UK, USA, Canada and Australia. China and Malaysia are also catching up quickly. Although the built environment professionals in these countries have a similar makeup and background as their Nigerian counterparts, VM seems to be a non-starter in this country.

Too often the client value system in the Nigerian construction industry is not achieved. The failure of such clients in achieving their value systems causes them to be dissatisfied with their investment in the Nigerian construction industry. Though, attempts have been geared to improve the situation, the problem is still increasing. As an alternative to Nigeria's existing practice, efforts have been made by previous researches recommending the adoption of value management in order to facilitate the achievement of the client value but the implementation is still yet to be welcomed. Value management has not yet been fully embraced in Nigerian construction industry as only very few number of value management workshops have been organized so far according to investigation and the workshops were even concluded prematurely. This may be a good start for the practice in the country and probably, one will expect it to gain ground in the next coming few years (Oke and Ogunsemi, 2011). The concept of value management is also gaining ground among Nigerian construction professionals as revealed by Olanrewaju and Khairuddin (2007). Some factors are drawing back the adoption of VM into the construction industry. The purpose of this research is not to further the theory of value management per se; rather, it is to proffer ways to facilitate the adoption of Value Management practice in the Nigerian Construction Industry. This research is motivated due to the constant problem faced by the Nigerian construction industry in terms of failure to deliver the client value system.

II. MATERIALS AND METHODOLOGY

3.1: Materials

For the second type of data in this study, it is based on comprehensive literature review on value management in journals, articles, and textbooks. In addition, information related to the problem was obtained from reliable sources, which in this case were from the Internet for recent journals published, and articles, and from the seminar paper on matters related to value management practice. The information helped in resuscitating the problem at hand. Textbooks related to value management methodologies were used as well and the books were available from the university library and online textbooks. The books were to give the general overview on value management methodologies and were to enhance the researcher to be focused on the problem statement. The literature reviews in this study were also used to guide the formation of questionnaire design.

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3.2: Selection of Respondents

The targeted respondents are professionals from construction and consultant firms including quantity surveying, architecture and engineering consultants located in Abuja, Kano and Kaduna states. In this study, the questionnaires were handed over manually to 80 respondents. This is to ensure that the target person receives the questionnaire form and it is much easier to retrieve back.

3.3: Research Design

A questionnaire survey form has been prepared for this research as shown in appendix A. It was based on the literature reviews from journals, seminar papers, previous study, and textbooks and also articles from the Internet. The questionnaire survey is aimed to get the answer or opinion regarding the practice of value management in the NCI, the factors hindering the practice and possible solutions to tackle/minimize these factors/constraints. The questionnaire includes the factors hindering the value management practice in the Nigerian Construction Industry and ways to minimize these factors to promote and facilitate the practice. The details of the preparation of the questionnaire survey are discussed in the following section.

3.3.1: Questionnaire Survey Design

The steps required to design and administer the questionnaire include defining the research objectives, determining the sampling group, writing the questionnaire, administering the questionnaire and interpretation of the results. The discussion will concentrate on how to formulate the questionnaire design for this research. The questionnaire survey design was intended to be as simple as possible but to be full of table in information gathering. There are rating scale technique and also fill in the blanks method for optional if the respondents have any views or opinions to add for this research. The respondents are obliged to tick at the appropriate box and the appropriate rating scale for each section.

The questionnaire is divided into six sections, which are Section A for 'Brief overview of value management for construction projects', Section B for general information of the respondents and their firms/companies, Section C for the respondents' perception on value management (VM), Section D for the current state of value management in the Nigerian construction industry, Section E for the factors hindering the practice of value management in the NCI and Section F for the ways to minimize the factors and hence facilitate the adoption of VM in the NCI. Section A aims to give the respondents a brief overview of value management as related to the construction industry. Section B is aimed to get general information of the respondents such as respondent's name, post, year of experience, company's name, representing firm/ consultant etc. From this section, we may know the view from various consultants, different post, knowledge and total experience of respondents. Section C aims to get the perception of the respondents on value management. Their perception of value management needs to be answered with five rating scales as follows:

> 1 – Strongly disagree
> 2 - Agree
> 3 - Neutral
> 4 - Agree

5 - Strongly disagree

Section D aimed to determine the current state of value management in the NCI. It also aims to get the background of projects that have been experienced by the respondents such as type of project, whether their projects involved value management practice or not, and outcome of the VM implementation if any.

Next is the Section E in which the factors hindering the practice of value management in the Nigerian Construction Industry would be examined and assessed. There are 29 factors in this section that have to be rated. The question is about the factors hindering the adoption, implementation and/or practice of value management in the Nigerian Construction Industry and the factors are simplified from the literature review and listed as follows:

1. Inadequate knowledge of benefits of value management.
2. Lack of knowledge and practice of VM.
3. Lack of understanding.
4. Lack of involvement of specialists right from the onset.
5. Poor management especially in the part of the client.
6. Lack of trained professionals in value management.
7. Use of quack professionals for construction works.
8. Lack of total quality management principle in construction firm.
9. Lack of information.
10. Greediness of the contractors and consultants.
11. Technology level.
12. Government policy.
13. Inadequate finance/funding.
14. Unstable economy.
15. Conflicts of objectives by different project stakeholders.
16. Ambiguous design.
17. Government factor.
18. Human factor.
19. Communication gap.
20. Construction methodology.
21. Professional incompetence.
22. Time of completion/delay.
23. Lack of professionals for construction works.
24. Procurement style.
25. Not suitable for low cost projects.
26. Conflict management.
27. Interruption to normal work schedule.
28. Lack of training opportunities in value management.
29. Too expensive to carry out VM.

Last Section, Section F aims to identify the ways to tackle/minimize the factors listed in Section E. The respondents are provided space for them to write their suggestions, which would help in minimizing the factors hindering the adoption of VM methodologies, and hence facilitate its practice in the Nigerian Construction Industry.

3.4: Analysis Method

There are two methods that were used in analyzing the collected data, which are frequency analysis and average index. Frequency analysis is used in analyzing general information in Section B, C and D of the questionnaire and this method will show the frequency, percentage and in

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certain questions in numbers. Next method is average index and it is used in analyzing Sections E and this method will show the average index and rating scale. The feedback from questionnaires will be analyzed through computer software - Microsoft Excel and SPSS.

3.4.1: Frequency Analysis

Frequency analysis is a method to decompose a function, wave or signal into its frequency components so that it is possible to have a frequency spectrum. The frequency analysis is used to represent results of data analysis of the number of frequency of response that the respondent gives to different variables in the questionnaire survey. The result will be tabulated in the form of frequency number and percentage according to total respondents. The frequencies can also be represented in the form of tables, pie charts and bar charts for graphic result.

3.4.2: Average Index Analysis

The average index analysis for each variable is calculated by using the formula as shown below (Al-Hammad, 1996):

$$\text{Average Index} = \frac{\sum a_1 x_1}{\sum x_1}$$

Where,

a_1 = constant expressing the weight given to i

x = variable expressing the frequency of response for i = 1, 2, 3, 4, 5,......n

Based on the assumed values stated earlier,

(Section C, part 3)

x_1 = frequency of the 'Strongly disagree' and corresponding to $a_1 = 1$

x_2 = frequency of the 'Disagree' and corresponding to $a_2 = 2$

x_3 = frequency of the 'Neutral' and corresponding to $a_3 = 3$

x_4 = frequency of the 'Agree' and corresponding to $a_4 = 4$

x_5 = frequency of the 'Strongly agree' and corresponding to $a_5 = 5$

Average index was used in analyzing each question in Section E and one question in Section C. In section C, there is only one question that needs to use average index analysis. In order to determine the perception of value management in construction projects, the questionnaire rating scale for perception of VM in Section C can be classified as indicated in the following table.

Table 3.1: The classification of the rating scales in Section A of the questionnaire

Rating Scale	Average Index (AI)
Strongly disagree	$1.00 \leq AI < 1.50$
Disagree	$1.50 \leq AI < 2.50$
Neutral	$2.50 \leq AI < 3.50$
Agree	$3.50 \leq AI < 4.50$
Strongly agree	$4.50 \leq AI < 5.00$

The last section i.e. Section F in which ways were proffered to tackle/minimize the hindering factors of VM practice in the NCI was analyzed by grouping the suggestions of the respondents into various classifications and similar opinions were framed as same.

III. ANALYSIS, FINDINGS AND DISCUSSION

4.1: Data Analysis

The collected data from the questionnaires were analyzed in two methods. These are frequency analysis and average index. Frequency analysis is used in analyzing general information in Sections B, C and D of the questionnaire and this method will show the frequency, percentage and in certain questions in number. The frequencies are represented in the form of tables and pie charts. Next method is average index and it is used in analyzing Sections E and F and a part of Section C. This method will show the average index and rating scale. Microsoft Excel was used to compute the results.

Responding to the factors hindering the adoption and practice of value management techniques and methodologies in the Nigerian construction industry, solutions/remedies/ways were suggested in order to minimize these hindrances and facilitate the adoption and practice of value management techniques in the NCI. The respondents suggested so many solutions and their responses were analyzed and classified into 5 various categories, namely:

1. Those related to professionals and professional bodies,
2. Those related to the government,
3. Those related to the clients and the community,
4. Those related to the materials and resources, and
5. Those related to the construction methodology.

Now the solutions/ways for minimizing these factors would be listed below in their respective categories.

4.6.1: Those related to professionals and professional bodies:

1. Promotion of value management as a separate specialization.
2. Encourage specialization within professionals in the same discipline.
3. Professional bodies should equip their members with VM skills.
4. Value management should be vigorously taught to professionals.
5. Conduct research, seminars, workshops and publications on VM importance and value.
6. Training in the field of cost analysis.
7. Engagement of competent and qualified professionals.
8. Improve prequalification of contractors.
9. Encourage more cooperation among the professionals and practitioners in the industry.
10. Adequate communication should be established between consultants for modification on projects.

4.6.2: Those related to government:

1. Enforcement of value management technique on projects.
2. Government should set guidelines for achieving low life cycle cost.
3. Forming a pressive group that can influence government policy.
4. Government policy be stabilized.
5. Government to discourage the use of quarks in construction projects.
6. Anti-corruption campaign.

4.6.3: Those related to clients and the community:

1. Value management should be highly advocated.
2. VM/VE be introduced as a course/subject in institutions.

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3. Enlightenment programs.
4. Sensitize potential clients on dangers of quackery.
5. Encourage clients to adopt value management in their projects.
6. Improve communication between stakeholders.
7. Improve education on benefit of life cycle cost.
8. Great awareness on the need and benefits of VM/VE to clients, contractors and professionals.

4.6.4: Those related to materials and resources:

1. Having the in-depth knowledge of the building materials.
2. Update on the construction materials.
3. Keeping abreast of the development in the building materials quality.
4. Having the knowledge of the periodic maintenance requirements.
5. Proper management of resources.
6. Realistic and adequate cash flow.

4.6.5: Those related to construction methodology and planning:

1. Making every building and infrastructural design to have alternative VM/VE option.
2. Incorporating VM processes in the procurement/design process.
3. Keeping abreast of the development and understanding the technological requirements overtime.
4. Keeping abreast of the value technology.
5. Update on construction techniques.
6. Introduction of life cycle policy for designs.
7. Sustainable planning.
8. Detail design be available before construction starts.
9. Eliminate unnecessary design.

IV. CONCLUSION

This study identifies and ranks the factors hindering VM practice in the Nigerian Construction Industry and proffers ways/solutions towards minimizing them and eventually facilitates the adoption of VM studies in the NCI.

Basically, it can be deduced that all the objectives adduced in Chapter One of this study have been successfully achieved. There were three objectives that had been set at the beginning of this study. These three objectives are: To identify the factors hindering the adoption/implementation/practice of value management in the Nigerian construction industry; To assess the factors hindering the practice of value management in the Nigerian construction industry; and To proffer ways to minimize the factors hindering the practice of value management in the Nigerian construction industry and hence eventually facilitate its practice in the industry. From the study, the following conclusions were derived:

1. In a nutshell, for the objective number one, twenty-nine (29) factors hindering the VM practice in the Nigerian construction industry were identified and presented.
2. For the objective number two, the factors were assessed and sixteen (16) of those factors are 'highly contributing' to the hindrance, eleven (11) contribute neutrally and only two (2) were assessed to be low contributing to the hindrance of value management practice in the Nigerian construction

industry. Of all these factors, it can be observed that the first three factors inadequate knowledge of benefits of VM, lack of knowledge and practice of VM, and lack of understanding; are all directly or indirectly related to 'lack of knowledge about value management' with average indices of 3.970, 3.938 and 3.909 respectively.

3. For the objective number three, it can be deduced that so many efforts have to be put from various sectors e.g. contractors, professionals, professional bodies, government, clients and even the community itself in order to facilitate the adoption of value management in the Nigerian construction industry. This will help to produce and give clients their value for money spent on their projects and hence boost the industry and the nation's economy at large.
4. It can also be observed that value management is not being practiced in the Nigerian construction industries.

V. ACKNOWLEDGMENT

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