
COBRA2009
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COBRA 2009

The Construction and Building Research Conference of the Royal Institution of Chartered Surveyors

Held at the University of Cape Town, 10-11 September 2009

ISBN 978-1-84219-519-2

12 Great George Street
London SW1P 3AD
United Kingdom

www.rics.org/cobra

September 2009

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The construction and building research conference of the Royal Institution of Chartered Surveyors held at the University of Cape Town, 10-11 September 2009

The RICS COBRA Conference is held annually. The aim of COBRA is to provide a platform for the dissemination of original research and new developments within the specific disciplines, sub-disciplines or field of study of:

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- Cost and value management
- Building technology
- Legal aspects of construction and procurement
- Public private partnerships
- Health and safety
- Procurement
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The property industry

- Information technology
- Innovation in education and training
- Human and organisational aspects of the industry
- Alternative dispute resolution and conflict management
- Professional education and training

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Paul Bowen (Chair)	University of Cape Town
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Keith Cattell	University of Cape Town
Kathy Michell	University of Cape Town
Stephen Brown	RICS

The doctoral students' session was arranged and conducted by:

Monty Sutrisna	University of salford, UK
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The CIB W113 Law and dispute resolution session was aranged and conducted by Paul Chynoweth of the Univeristy of Salford, UK

Peer review process

All papers submitted to COBRA were subjected to a double-blind (peer review) refereeing process. Referees were drawn from an expert panel, representing respected academics from the construction and building research community. The conference organisers wish to extend their appreciation to the following members of the panel for their work, which is invaluable to the success of COBRA.

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In addition to this, the following specialist panel of peer-review experts assessed papers for the COBRA session arranged by CIB W113, Law and dispute resolution:

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RICS COBRA Research Conference, University of Cape Town, 10-11th September 2009.
Ayodejo Oke and Deji Ogunsemi, pp 23-38

Competencies of quantity surveyors as value managers in a developing economy

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ABSTRACT
One of the important requirements of any profession is its ability to respond to changes in its professional environment. The dynamism of the construction industry throughout the world call for no other skill of a professional quantity surveyor than the need for stringent cost control and effective cost management in providing value for money for construction clients. The aim of this research work is to examine the competencies of quantity surveyors in a developing economy with a view to ascertaining their preparedness for the challenge of value management. Primary data were collected via questionnaire and interview. Percentile, mean internal score, Cronbach's alpha test and Spearman's rank were employed in the analysis and testing of the hypotheses generated. The study revealed that all the identified areas of competencies of quantity surveyors are significant to the practice of value management and Nigerian quantity surveyors exhibit all the required areas of competencies of value managers. It was concluded that Nigerian quantity surveyors has the potential to fully participate in value management exercise and contribute their expected quota. The study finally recommended a need for special training for quantity surveyors in Nigeria – especially the older ones- in order to keep them abreast with the current incidence in the construction industry especially in the area of value management.

Keywords: Competencies, Nigeria, Quantity Surveyors, Value Managers,

1 Introduction

Jagun (2006) opined that the quantity surveying profession is faced with great challenges for its survival in Nigeria. Steven (1990) observed that quantity surveying is becoming an increasingly client influenced occupation while Sigle, Klopper and Visser (2000) believed that these clients are increasingly demanding application of value management to their projects. Quantity surveyors have been linked to the discipline of value management right from its inception. Brown (1992) as cited by Olanrewaju and Khairuddin (2007) noted that value management represents a natural progression for the quantity surveyors in leading the search for alternative approach towards achieving client's requirements at the lowest cost. This is expected to be the same virtually in all other countries and Nigeria is gradually moving toward this era.
The discipline of value management, which was first applied to construction projects in the United States in 1970s (over four decades ago) according to The College of Estate

Management (1995), is receiving an increasing amount of attention within the international project management community (Stuart, 1994). In South Africa, Sigle *et al* (2000) observed that clients are insisting that value management should be applied to their construction projects and such could probably be attributed to the effectiveness of value management as a tool for ensuring value for money. According to schedule of services and recommended charges (2002 edition)) for quantity surveying and cost consulting services by Canadian Institute of Quantity Surveyors (CIQS), value management is a key service of a Canadian quantity surveyor and detail of schedule of services under this is well explained in the manual. This is supported by a report on required skills and knowledge of a cost engineer (2000) of AACE international recommended practice No. 11R-88 where value management is placed under section VI that has to do with economic analysis and business planning.

Value management has not been fully embraced in the Nigerian construction industry as only very few number of value management workshops have been organised 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 couple of years. The concept of value management is also gaining ground among Nigerian quantity surveyors than any other professionals as revealed by Olanrewaju and Khairuddin (2007) where about 36%, 30%, 11% and 19% of the research population that are familiar with value management are quantity surveyors, engineers, architects and estate mangers respectively. It is to be noted at this point that familiarity with the practice of value management does not necessarily connote competencies to function as a value manager neither is it enough to ascertain the number of professional that has been involved in value management workshop at one time or the other.

The challenge to the Nigerian quantity surveyors can be linked to an assertion by Anago (2006) that, "when a professional man holds himself out as qualified in a particular professional discipline, he thereby indicates that he is competent to render the services associated with such a profession to the required degree of skill and expertise". This is supported by a report of Royal Institute of Chartered Surveyors (1991) where it was stated that "quantity surveying is very much a client led profession in that the professional quantity surveyors respond to client needs and must continue to develop more on their own initiatives. Concerns in the coming decade will be dominated by the need to anticipate and satisfy changing client requirements". Value is one of the fundamental requirements of any client and the quantity surveyor is the professional trained to shoulder this client need. This called for a need to look into the competencies of Nigerian quantity surveyors with respect to their skills, knowledge and experience in their quest to function as a major and key member of construction projects value management team and this is the concept behind this study.

The problem lies not in ascertaining whether the quantity surveyors should be a part of value management team (which has already been established right from the emergence of value management as detailed by The College of Estate Management (1995)) neither does it lie in proofing that quantity surveyors are the best value managers compared to other construction professionals. The problem lies in asking the question that "can

Nigerian quantity surveyors contribute their expected quota efficiently and effectively to value management exercise based on their experience and training?

2 Literature Review

2.1 Value management

There are so many views and opinion on the discipline of value management. The Institute of Value Management (2008) defined the term value management as "a style of management particularly dedicated to motivating people, developing skills and promoting synergies and innovation, with the aim of maximizing the overall performance of an organization"

The concept of value management according to Society of American Value Engineers (2008) is defined as "a systematic, multi-disciplinary effort directed towards analysing the functions of projects for the purpose of achieving the best value at the lowest overall life cycle cost". This definition is not complete as observed by De Leeuw (2006) where he stated that return on investment, which is a vital issue to the private sector, is supposed to be included.

Value management according to The Office of Government Commerce (2007) is "a well established methodology for defining and maximising value for money". As incomplete this definition may be, it suggests that the discipline of value management can be applied to any type of project regardless of size or timeframe and at all stages i.e. throughout the life cycle of the project from inception to completion. This may be contrary to the general belief that value management must and can only be applied at the design stage of construction project. This connote that value management is becoming dynamic and various forms of its application in the construction industry are springing up. This discrepancy is further clarified by Kelly and Male (2006) where value engineering is said to be a sub-set of value management in that the former deals mainly with the design processes while the latter deals with the overall management of value throughout the contract. This is further supported by The College of Estate Management (1995).

Odeyinka (2006) defined value management as "a service, which maximises the functional value of a project by managing its development from concept to completion and commissioning through the audit (examination) of all decisions against a value system determined by the client". The following can therefore be described as the core of value management definition as observed by Short, Barrett, Dye and Sutrisna (2008): A systematic or organised approach; Multi-disciplinary; Analysis of function (Functional analysis); Inception to completion and commissioning; Best value; Lowest possible overall life cycle project cost; and Return on investment. In summary, value management can therefore be seen as "a systematic and multi-disciplinary process directed towards analysing the functions of projects from its inception to completion and commissioning (through auditing or examination) for the purpose of achieving best value and return on investment at lowest possible overall life cycle cost.

2.2 Competencies of value managers

Meyer and Semark (1996) described competence as the demonstration of an integration of knowledge, skill, personal attributes and value orientation. Wisher (1994) insisted that competencies provide a common cultural thread, a language for success, a framework for thinking about excellence and a way of communicating the future.
Sigle *et al* (2000) identified ten key skills required of a value manger by Potential Index Battery (PIB) based on series of diagnostic instruments developed by Erasmus and Minnas (1996) over a period of twenty years. These ten basic skills that form the competencies areas of a value manager in rank order were creativity, mental alertness, leadership – transformational, listening skills, conflict management – collaborative, social style – expressive, innovation, adaptability, self motivation and abstract reasoning.

2.3 Personal skill attributes of value managers

Daddow and Skitmore (2005) identified 20 personal skill attributes of a value manager through the results of an interview survey involving 17 professionals working in the property and construction industry. These attributes are lateral thinking ability and intuition, an inquiring mind, industry expertise, life experiences, a positive, constructive approach, knowledge of the client/owner requirements, motivated and enthusiastic, proactive, attentive, smart thinking, having an open mind and an objective approach to communication, having personal skills, no preconceived ideas, able to bring expertise to the value management workshop, ability to communicate ideas confidently and professionally, confidence, understanding that what people may say, may not be quite what they mean, so they need to be able to interpret and 'read between the lines', recognise reactions whether verbal or physical, able to listen to other ideas and relate to others and be adaptable and flexible.

2.4 The quantity surveyor

Quantity surveyors are called by so many names all over the world such as cost engineers, building economists, cost managers, construction accountants, etc and different authors have adopted these different names in different studies (RICS, 1991; Kelly and Male, 2006) and in Nigeria such as (NIQS, 2004; Ogunsemi, 2004; Babalola, 2006; Odeyinka, 2006; Oke, 2006). It is to be noted that the most common name for this professional in Nigeria is "quantity surveyors". Quantity surveyor according to Wikipedia (2008) is "a professional trained, qualified, and experienced in handling construction cost, construction management and construction communication on behalf of the client".

The Nigerian Institute of Quantity Surveyors (2004) defined a quantity surveyor as the expert professionally trained and experienced in dealing with construction cost, construction management and construction communication. This he exhibit in various types of projects including building construction, civil and structural engineering, mechanical building and engineering services, petrochemicals, mineral extraction, cost and production engineering, environmental economics, planning and urban development, landscaping, interior design and all other relevant areas.

2.5 Competencies of quantity surveyor

The RICS (1998) set out the requirements and competencies for the assessment of

professional competence by listing the competencies required of quantity surveyors in three categories: basic competencies, core competencies and optional competencies, as shown in Table 1. The basic competencies are widespread to all construction professions under the RICS while core competencies are exclusively vital to the profession of quantity surveying. The optional competencies reveal areas of specialty or future career diversification.

Table 1: Headings of competencies required by quantity surveyors for APC

Basic competencies	Core competencies	Optional Competencies
*Personal and interpersonal skills	*Construction contract practice	*Arbitration and other dispute resolution procedures
*Business skills	*Construction technology and environmental services	*Development appraisal
*Data management; information technology	*Economics of construction	*Facilities management
*Professional practices	*Procurement and financial management	*Insolvency
*Law		*Insurance
*Measurement		*Project management
*Mapping		*Property investement funding
		*Research methodology & techniques
		*Taxation allowance &grants
		*Valaution

Source: The Royal Institution of Chartered Surveyors (1998)

2.6 Quantity surveyors and value management

Quantity surveyor has been linked to value management right from its inception in the United States. It was observed by Kelly and Male (2006) that there can not be a successful value management exercise except there is an involvement and full participation of a cost expert (or a quantity surveyor as the case may be). Most times, it is the quantity surveyors that spare head, organise and plan most value management workshops. In Nigeria, Olanrewaju and Khairuddin (2007) concluded from a research on value management in Nigeria that quantity surveyors are the most familiar with the discipline of value management. This is a convincing report that a value management exercise can not be successful as expected if there is no participation of at least a quantity surveyor.

Although, value management was not listed in the RICS areas of competencies required by quantity surveyors for APC (Assessment of Professional Competence), it is to be noted that this discipline can be categorised under optional competencies since it is not compulsory for all quantity surveyor to participate or get involved in value management process – it remains an optional area of competencies. This has been catered for by other associate bodies of RICS in their list of professional services or areas of competencies required of a quantity surveyor. Such includes AACE (Association for the Advancement of Cost Engineering International), NIQS (Nigerian Institute of Quantity Surveyors), CIQS (Canadian Institute of Quantity Surveyors), AIQS (Australian Institute of Quantity Surveyors), etc.

The skills of the value manager comprise the ability to understand a value problem, design, structure and implement a process to bring value systems together and introduce improvements (Male and Kelly, 2008). Stuart and Anita (2007) observed that the involvement of value management practitioners from quantity surveying firms is limited to the later stages of the project life cycle as a result of the stereotypical expectations that clients have of quantity surveyors as 'after-the-event cost cutters'. In Leung (2005) view, students of the value management postgraduate course should have completed a standard undergraduate course in construction related subjects such as architectural design, development planning, civil engineering, building services engineering, quantity surveying, etc suggesting a link between the two fields.

3 Research Methodology

Primary source of data collection through a well-structured questionnaire was administered to relevant and appropriate professionals in the construction industry. Due to the nature of the research (i.e. predictive/future based), open and close ended interview was also considered a good means of collecting data because the research needed to acquire much information about the subject thus did not place any limitation on the way the respondents are to respond. Also, there isn't much available literature on value management exercise/workshop in Nigeria, so the research required firsthand information.

The population were the Nigerian construction professionals that are eligible to be a member of construction projects value management team and they are: Architects; Quantity surveyors; Builders; Engineers; and Estate Surveyors and Valuers.

Due to a large population as identified above, the sampling frame was delimited to Lagos state of Nigeria where research questionnaires were distributed. The choice is on the premise that Lagos is the commercial capital city of Nigeria and most of the construction professionals in this state handle projects in other states of the federation. Fagbemi (2008) observed that 75% of quantity surveying firms in Nigeria are either based in Lagos state or have their branches located there. The result of the study is expected to represent the whole population. More so, the list of professionals were obtained from relevant professional bodies and the sample size in respect of the various categories of respondents was determined from the following formulae as used by Kish (1965) in Shash and Abdul-hadi (1992)

$$n = \frac{n^l}{1 + \frac{n^l}{N}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

Where n = sample size: $n^l = \frac{S^2}{V^2}$ ……..2

N = Total population, V = Standard error of sampling distribution = 0.05,
S = the maximum standard deviation in the population elements

Using the formulae, the sample sizes for each of the respondents were calculated and the result is as shown in table 2. Out of the 265 questionnaires administered, 94 were returned and filled, this represent 35.5% of the total questionnaire sent out which is

considered sufficient for the study base on the assertion of Moser and Kalton (1999) that the result of a survey could be considered as biased and of little significant if the return rate was lower than 20-30%. More so, 12 construction professionals cutting across all the professional bodies were also interviewed.

Tables were employed in this research for data presentations and analysis of the collected data was carried out using the following descriptive and inferential statistical methods: frequencies; percentiles; cronbach's alpha test; mean internal score (MIS); and Spearman's rank correlation coefficient.

Cronbach's alpha test was used in testing the reliability and viability of the research instrument and the result is as presented in table 3.

Table 2: Sample size and returned questionnaires

Ref. No.	Respondent	Population	Sample size	Returned
A	Architect	233	66	22
B	Quantity Surveyors	148	49	21
E	Estate valuers	194	52	13
C	Professional Builders	107	43	17
D	Structural Engineers	214	55	21
	Total	896	265	94

Table 3: Reliability Coefficients for the Measuring Scales

Scale of Measure	Cronbach's α
Significance of areas of competencies of value managers	0.697
Performance of Nigerian quantity surveyors with respect to the areas of competencies of value managers	0.805
Significance of personal skill attributes of value managers	0.756
Performance of Nigerian quantity surveyors based on the personal skill attributes of value managers	0.766
Significance of areas of competencies of quantity surveyors	0.521
Performance of Nigerian quantity surveyors with respect to their areas of competencies	0.501
Relevance to value management of areas of competencies of quantity surveyors	0.725

Table 3 shows that the Cronbach's α value for scale of measures of the research instruments ranged from 0.501 to 0.811. Since the degree of reliability of the instrument is more perfect as the value tends towards 1.0 (Moser and Kalton, 1999), it can then be concluded that the instruments used for this research are significantly reliable.

4 Findings and Discussion

4.1 Characteristics of the respondents

Table 4 shows the general characteristics of respondents for the questionnaire distribution. It is observed that about 23%, 18% and 14% of the respondents were quantity surveyors, builders and estate valuer respectively while engineers and architects that responded to the questions were about 22%. The mean year of working experience of these respondents was calculated to be 9.83 which could be considered appropriate for the study.

As expected, all the professionals were members of their professionals' bodies as the frequencies for each body corresponds with that of the professionals. However, majority of these professionals are corporate (Associate or members) members (about 46%) followed by graduate members with about 37% while probationers and fellows were about 14% and 3% respectively. On the geographical zones that the respondents have executed one or more projects, all the respondents have been involved in project located in the South-West region as expected and this is followed by South-South and South-East respectively. It could be concluded that about 41% of construction professionals in Lagos state i.e. the respondents have participated or involved in other projects located in other geographical zones of the country.

On the other hand, table 5 shows the general characteristics of the respondents for the interview. It could be observed that the respondents are spread across all the professional bodies relevant to the study with mean year of working experience of about 16 years.

Table 4: Summary of characteristics of respondents for questionnaire administration

Category	Classification	Frequency	Percent
Profession	Quantity Surveying	22	23.40
Of	Architecture	21	22.34
Respondents	Estate Surveying and valuing	13	13.83
	Building	17	18.09
	Engineering	21	22.34
	Total	***94***	***100.00***
Year	0 - 5	36	38.30
Of	6 - 10	20	21.28
Working	11 - 15	20	21.28
Experience	16 - 20	9	9.57
	21 - 30	9	9.57
	Mean	***9.83***	
Professional	NIQS	22	23.40
Qualification	NIA	21	22.34
	NIESV	13	13.83
	NIOB	17	18.09
	NSE	21	22.34
	Total	***94***	***100.00***
Professional	Graduate	35	37.23
Membership	Probationer	13	13.83
Type	Corporate	43	45.74
	Fellow	3	3.19
	Total	***94***	***100.00***
Geographical	North-East	6	4.51
Zones of	North-Central	8	6.02
Project	North-West	4	3.01

Execution	South-East	9	6.77
	South-South	12	9.02
	South-west	94	70.68
	Total	***133***	***100.00***

Table 5: Summary of characteristics of interviewees

Category	Classification	Frequency	Percent
Profession	Quantity Surveying	4	33.33
Of	Architecture	2	16.67
Respondents	Building	3	25.00
	Engineering	2	16.67
	Estate surveying and valuing	1	8.33
	Total	***12***	***100.00***
Year	0 – 5	0	0.00
Of	6 – 10	2	16.67
Working	11 – 15	4	33.33
Experience	16 – 20	4	33.33
	21 – 30	2	16.67
	31 and above	0	0.00
	Mean	**15.83**	
Academic	HND	1	8.33
Qualification	PGD	5	41.67
	Bachelor	1	8.33
	Masters	5	41.67
	Ph.D	0	0.00
	Total	***12***	***100.00***
Professional	Graduate	2	16.67
Membership	Probationer	1	8.33
Type	Corporate	9	75.00
	Fellow	0	0.00
	Total	***12***	***100.00***

4.2 Competencies of Nigerian quantity surveyors as value managers

On the ability of Nigeria quantity surveyors to perform and participate effectively in value management if fully incorporated into construction projects in Nigeria, the opinion of respondents based on the questionnaire showed that about 53%, 35% and 4% of the respondents rank them as good, excellent and average respectively as shown in table 6. This shows that their performance is between good and excellent.

Table 6: Ability of Nigerian quantity surveyors to perform as value managers

Criteria	Frequency	Percent
Average	4	4.26
Good	50	53.19
Excellent	33	35.11
Missing data	7	7.45
Total	94	100.00

Based on the result of the interview, table 7 shows that quantity surveyors are rated as good in term of general performance while fresh graduates were rated as just above average. All the respondents were of the opinion that Nigerian quantity surveyors do possess the ability to function as value managers and they were also rated as very good (between good and excellent) in respect to their ability to contribute and participate effectively in value management exercise.

Table 7: Nigerian quantity surveyors and value management

Category	Criteria	Frequency	Percent
Performance of	Average	1	8.33
Nigerian	Good	10	83.33
Quantity surveyors	Excellent	1	8.33
	Total	***12***	***100.00***
Competence of	Poor	1	8.33
Nigerian fresh	Average	6	50.00
QS graduates	Good	5	41.67
	Total	***12***	***100.00***
Ability of QS	Yes	12	100.00
as Value managers	No	0	0.00
	Total	***12***	***100.00***
Ability of QS to	Average	1	8.33
Contribute to	Good	5	41.67
Value management	Excellent	6	50.00
	Total	***12***	***100.00***

The competencies of Nigerian quantity surveyors was examine using the areas of competencies of value managers, personal skill attributes of value managers and the areas of competencies of quantity surveyors. Hypotheses were generated and tested accordingly.

4.3 Using the areas of competencies of value managers as criteria

Based on the respondents' opinion on the competencies of value managers, the mean of their significance and that of the performance of Nigerian quantity surveyors are presented in table 8. It could be observed that the minimum mean value recorded in

term of performance of Nigerian quantity surveyors is 3.79 which if more than average and well above the minimum recorded mean score in terms of the significance i.e. 3.73. The mean were correlated based on the following hypothesis:

Null Hypothesis (H_0): There is no significant relationship between the areas of competencies of value managers and the performance of Nigerian quantity surveyors.

Alternate Hypothesis (H_1): There is significant relationship between the areas of competencies of value managers and the performance of Nigerian quantity surveyors.

From the result of the analysis, it was observed that Spearman's rank correlation coefficient (Rs) = 0.712 and P-value is 0.000 at 10% significance level i.e. there is significant relationship. Therefore, the null hypothesis is rejected while the alternate which state that "there is significant relationship between the areas of competencies of value managers and the performance of Nigerian quantity surveyors" is accepted.

Table 8: Nigerian quantity surveyors and value management competencies

No	Competencies of Value Managers (VM)	Significance to VM		Performance of QS	
		Mean	Rank	Mean	Rank
A	Creativity	4.03	4	3.89	6
B	Mental alertness	4.12	2	4.11	2
C	Leadership – transformational	4.02	5	3.79	9
D	Listening skills	4.05	3	3.96	4
E	Conflict Management (Collaboration)	3.73	10	3.94	5
F	Social style (Expressive)	3.81	8	3.89	6
G	Innovation	4.13	1	3.82	8
H	Adaptability	3.81	8	3.77	10
J	Self motivation	3.92	7	4.16	1
K	Abstract reasoning	4.00	6	4.08	3

4.4 Using the personal skill attributes of value managers as criteria

With respect to respondents' opinion on the personal skill attributes of value managers, the mean of their significance and that of the performance of Nigerian quantity surveyors were presented in table 9. It could be observed that the minimum mean value recorded in term of performance of Nigerian quantity surveyors is 3.80 which is more than average and well above the minimum recorded mean score in terms of the significance of the identified factors i.e. 3.49. Correlation test was carried out based on this hypothesis:

Null Hypothesis (H_0): There is no significant relationship between the significance of personal skill attributes of value managers and the performance of Nigerian quantity surveyors.

Alternate Hypothesis (H_1): There is significant relationship between the significance of personal skill attributes of value managers and the performance of Nigerian quantity surveyors.

From the result of the analysis (as detailed in the appendix), it was observed that Spearman's rank correlation coefficient (Rs) = 0.682 and P-value is 0.001 at 10% significance level i.e. there is significant relationship. Therefore, the null hypothesis

(Ho) is rejected while the alternate which state that "there is significant relationship between the significance of personal skill attributes of value managers and the performance of Nigerian quantity surveyors" is accepted.

Table 9: Nigerian quantity surveyors and personal skill attributes of value managers

No	Personal Skill Attributes of Value Managers (VM)	Significance to VM		Performance of QS	
		Mean	Rank	Mean	Rank
A	Lateral thinking ability and intuition	4.06	9	4.05	10
B	An inquiring mind	4.00	14	4.16	4
C	Industry expertise	4.04	11	3.94	15
D	Life experiences	4.11	5	4.09	7
E	A positive, constructive approach	4.06	9	4.44	1
F	Knowledge of the client/owner requirements	4.22	2	4.43	2
G	Motivated and enthusiastic	4.03	12	4.14	6
H	Proactive	4.13	4	3.90	16
J	Attentiveness	4.01	13	3.99	14
K	Smart thinking	4.40	1	4.07	9
L	Having an open mind and an objective approach to communication	4.11	5	3.80	20
M	Having personal skills	4.09	8	3.89	18
N	No preconceived ideas	3.49	20	3.86	19
P	Ability to bring expertise to the VM workshop	3.86	17	3.90	16
Q	Ability to communicate ideas confidently and professionally	4.11	5	4.09	7
R	Confidence	4.19	3	4.19	3
S	Understanding that what people may say, may not be quite what they mean	3.74	19	4.01	12
T	Recognise reactions whether verbal or physical	3.84	18	4.00	13
U	Able to listen to other ideas and relate to others	3.92	15	4.03	11
V	Be adaptable and flexible	3.87	16	4.15	5

4.5 Using the area of competencies of quantity surveyors

Based on the respondents' opinion on the areas of competencies of quantity surveyors, the mean of their relevance to value management and that of the performance of Nigerian quantity surveyors were presented in table 10. It could be observed that the minimum mean value recorded in term of performance of Nigerian quantity surveyors is 3.54 which is above average. Correlation test was also carried out based on this hypothesis:

Null Hypothesis (H_0): There is no significant relationship between relevance of areas of competencies of quantity surveyors and the performance of Nigerian quantity surveyors.

Alternate Hypothesis (H_1): There is significant relationship between relevance of areas of competencies of quantity surveyors and the performance of Nigerian quantity surveyors.

From the result of the analysis (as detailed in the appendix), it was observed that Spearman's rank correlation coefficient (Rs) = 0.684 and P-value is 0.001 at 10% level

i.e. there is significant relationship. Therefore, the null hypothesis (Ho) is rejected while the alternate which state that "there is significant relationship between relevance of areas of competencies of quantity surveyors and the performance of Nigerian quantity surveyors" is accepted.

Table 10: Areas of competencies of quantity surveyors and value management

No	Areas of competencies of quantity surveyors	Relevance to VM		Performance of QS	
		Mean	Rank	Mean	Rank
A	Personal and interpersonal skill	4.26	7	4.17	6
B	Business skill	4.26	7	3.91	14
C	Data, information and information technology	4.27	6	3.97	12
D	Professional practice	4.42	1	4.18	5
E	Law	3.94	17	3.91	14
F	Measurement	4.11	11	4.22	4
G	Mapping	3.88	19	3.82	17
H	Construction contract practice	4.23	9	4.26	3
J	Economics of construction	4.42	1	4.16	7
K	Procurement and financial management	4.36	4	4.06	10
L	Construction technology and environmental services	4.37	3	4.11	8
M	Arbitration and other dispute resolution procedures	4.08	13	4.10	9
N	Developmental appraisal	4.06	16	3.86	16
P	Facilities management	4.09	12	3.75	19
Q	Insolvency	3.88	19	3.54	21
R	Insurance	3.92	18	3.93	13
S	Project management	4.20	10	4.26	2
T	Property investment funding	4.08	13	3.76	18
U	Research methodologies and techniques	4.08	13	4.01	11
V	Taxation allowances and grant	3.78	21	3.68	20
W	Valuation	4.36	4	4.40	1

4.6 Discussion of findings

The research found out that fresh quantity surveying graduates in Nigeria are performing well above average and this is supported by Babalola and Dada (2005) where it was stated that Nigeria has capable and highly intelligent quantity surveying graduates.

Using the areas of competencies of value managers, their personal skills and areas of competencies of quantity surveyors, the Spearman's rank correlation statistical test carried out showed that Nigerian quantity surveyors are competent to function as value managers. In agreement, De Leeuw (2006) concluded that the outgoing and knowledgeable quantity surveyor could, with the necessary training, be a superb candidate for acting as a value management facilitator.

On the average, most of the respondents for the survey rated Nigerian quantity surveyors between good and excellent (i.e. very good) in respect to their ability to perform as value managers. This is supported by the result of the interview where all the respondents responded yes to question on whether Nigerian quantity surveyors possess

the ability to function as value managers. In contrary, Sigle *et al* (2000) found out that the extent of match between the skill profile of the quantity surveyor and that for value manager is below average to average. This may be as a result of different approaches the study employed; the finding employed a survey method while Sigle *et al* (2000) made use of a combination of structural test and survey. It was however stated that, as a result of their background and training, some quantity surveyors do have the potential to be a successful value manager.

5 Conclusion and Further Research

It can be conclude based on the result of the finding that quantity surveyors in a developing can significantly function as value managers and contribute their expected quota effectively and efficiently. The study finally recommended the following based on the opinions of the interviewee:

1. The need for quantity surveyors to broaden their knowledge of value management by attending international conferences, seminar, workshop, symposium, etc

2. Institute regulating Quantity Surveying in developing countries could include value management as a course in their professional examinations as this will contribute to the knowledge of their members.

Some of the findings of the study provide possible directions for further studies in the following areas:

1. The study was limited to construction professionals in Nigeria. More research work can be done using professionals from other developing nations of the world.

2. The current study adopted the use of interview and questionnaire. Further research can be of structural test (as used by Sigle *et al* (2000)) for selected quantity surveyors of good number of years of experience. The test should not be limited to areas of competencies of value managers but should also include the identified personal skill attributes of value managers and areas of competencies of quantity surveyors.

6 Acknowledgement

This paper is part of a larger research work in fulfilment for the award of Masters of Technology (M.Tech) degree in quantity surveying.

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