ASSESSMENT OF KNOWLEDGE MANAGEMENT CAPABILITIES OF THE NIGERIAN QUANTITY SURVEYING FIRMS

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Abstract: Knowledge management (KM) capabilities provide the supportive structure required to share knowledge within the context in which it is required in an organizations and they can encourage acquiring knowledge, protecting knowledge and facilitating knowledge sharing in an organization. This paper aims to assess the capabilities of the Nigerian Quantity Surveying firms in adopting KM concept and provide proper recommendation in order to adopt and implement KM successfully. 78 structured questionnaires were submitted to the professionals in the practicing Quantity Surveying firms to obtain the required data for the purpose of this study. A quantitative research approach was carried out to achieve the stated aim of the study. Our assessment uncovers to us the extent of KM capabilities of the Nigerian Quantity Surveying firms and also pin point the grey areas such as motivation that should be improved in order to adopt and implement KM successfully. The statistical sample of the respondents participated in the questionnaire survey was limited to only practicing Quantity Surveying Consultancy firms resident in Kaduna and Kano states of Nigeria and this could affect the generalization of the findings to the entire country. The structure of the questionnaire search was focused only on the capabilities of the practicing Quantity Surveying Consultancy firms in view of adopting KM and the variables considered was restricted to only knowledge-based capabilities (creativity, intelligence, skills, motivation and communication) whereas resource-based capabilities (organizational culture, structure and technology infrastructure) was not give much emphasis in this research work. This research consolidates collective movement towards implementation of KM in the Nigerian Quantity Surveying Consultancy firms and forms a guide for improving KM capabilities in these firms.

Keywords: ANOVA, Knowledge Management Capabilities, Nigeria, Quantity Surveying Firms, Ranking,

INTRODUCTION

In the last decade, the importance of knowledge has been highlighted by both academics and practitioners (Wu & Lin, 2009). Nowadays, knowledge is the fundamental basis of competition (Zack, 1999; Grant, 1996). Particularly tacit knowledge can be a source of competitive advantage because it is unique, imperfectly mobile and non-substitutable. However, the mere act of processing knowledge itself does not guarantee strategic advantage. Instead, knowledge has to be managed (Zack 2002).

Bhatt (2001) opined that KM is a process which enables organisations to learn, creates, develop and apply necessary knowledge. According to Mason and Pauleen (2003), the aim of KM strategies is to facilitate learning and the creation of new knowledge by teaching individuals where to find appropriate organisational knowledge, the way to use and apply it effectively and to share and disseminate it appropriately.

Within the research community, three major factors are emphasized for successful implementation of KM thus; capabilities, processes and organizational performance (Bechman, 1999; O'Dell & Grayson, 1999; Demarest, 1997). Nonaka (1995) opined that KM capabilities are organizational mechanisms for generating knowledge continuously. Stonehouse & Pemberton, (1999) added that, they can encourage acquiring knowledge, protecting knowledge and facilitating knowledge sharing in an organization. However, KM processes can be thought of as a structured coordination for managing knowledge effectively or the tasks and activities that are implemented to manage knowledge (Gold *et al*, 2001). Constantly, within the KM field, capabilities that influence KM have been advanced as preconditions or organizational resources for effective KM (Lee & Choi, 2003; Malone, 2002; Gold et al, 2001;

Gray, 2001). For instance, Lee & Choi (2003) emphasized that KM consists of processes to manage knowledge and capabilities to support these processes.

However, to survive and grow the Quantity Surveying professionals must respond quickly and creatively to the challenges of accelerating social, economical and environmental change (Davis *et al*., 2007). An essential element in the future success is the skill and Knowledge base at the core of professional practice (RICS, 2001). It is believed that KM is a relatively quicker and more effective way to enhance Quantity Surveying professionalism (Webb, 1998; Egbu *et al*., 2001).

Considering the importance of KM to Quantity Surveying firms as demonstrated above, researchers and practitioners in Nigeria seems not to have paid adequate attention to the all-important concept (Sodiya *et al*., 2006).

To bridge this gap, it is therefore important to begin with a properly documented study and project survey on the assessment of KM capabilities of the Nigerian Quantity Surveying firms since it is the prerequisite to KM processes and organizational performance so that efforts can be concentrated on them in order to adopt and implement KM successfully.

Theoretical background and Conceptual model

KM capabilities provide the supporting structure required to share knowledge within the context in which it is required. Lawton (2001) noted that, at least more than half of failed KM initiatives are due to firms not considering their deployment strategies, which according to Gold *et al*., (2001) depends on the firms' capabilities. He further argued that the problem of ineffective KM is that firms are not considering their capabilities before implementing KM program.

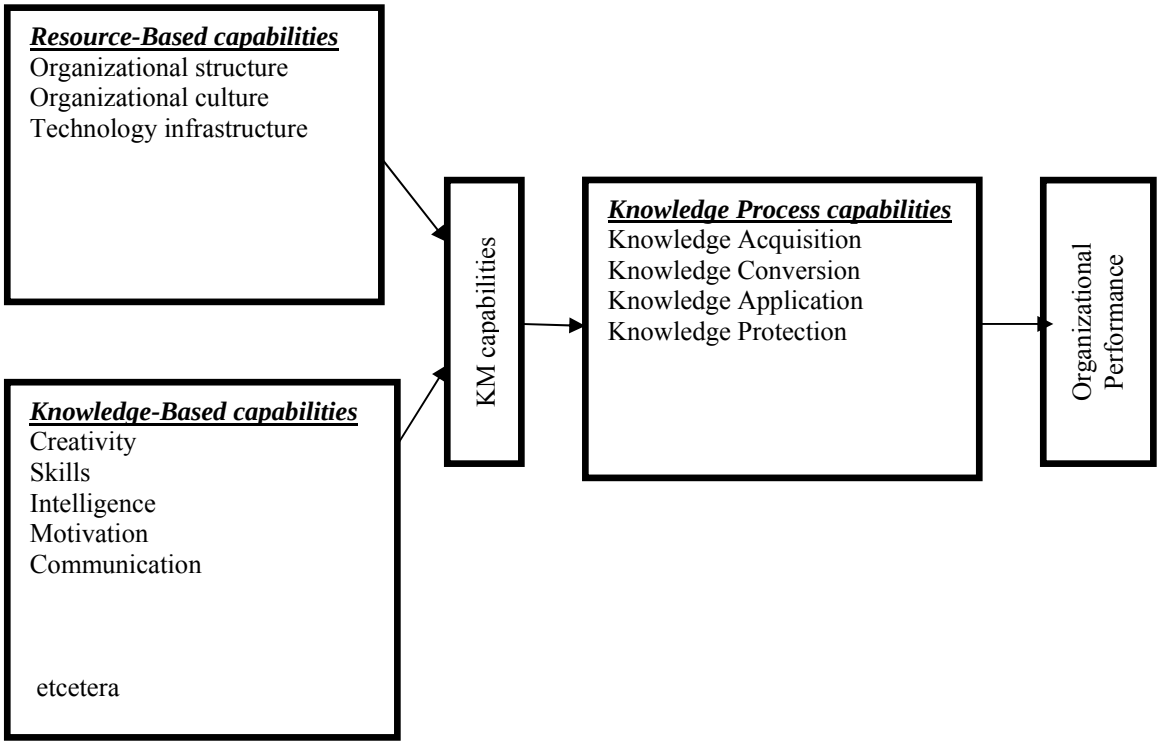
Several researchers have addressed KM capabilities. Lee and Lee (2007) examine the structural relationships among the capabilities, processes, and performance of KM, and suggest strategic directions for the successful implementation of KM. Similarly, Momeni *et al*., (2011) attempted to present a conceptual model for KM process capabilities (KMPC) and core competencies (CC) in Iran Khodro Company (IKCO). A total of 198 filled questionnaires were collected and analysed. It was found that, there is significant and positive relationship between KMPC and CC in IKCO.

Moreover, Kazeem *et al*., (2012) attempted to examine the impact of specific KM resources (capabilities) on organizational performance of 245 small size business enterprises. Results showed that some knowledge resources (e.g. organizational structure, knowledge application) are directly related to organizational performance, while others (e.g. technology, knowledge conversion) are not directly related to organizational performance. Leidner and Alavi (1999) involved 109 participants from 12 different countries to participate in a survey that aimed to define the concept of KM that managers ascribe to the concept of KM. When asked what capabilities their organisations needed for successful KM, three perspectives emerged: an information-based perspective, a technology-based perspective, and a culture-based perspective.

However, in another study by Cooparat *et al*., (2010) that aimed to synthesize and propose the indicators of knowledge management capabilities (KMC) in different knowledge management (KM) processes, utilizing related documents, literature and other research studies. The results of the research suggest two main aspects of KMC for KM effectiveness: first, a resource-based perspective, which comprises technology, structure and culture; and second, a knowledge-based perspective, which comprises creativity, intelligence, skills, motivation and communication.

Moreover, Adeeko (2012) in her research that aimed to assess the KM requirements (capabilities) in the consultancy firms in the Nigerian Construction Industry. Resource-based capabilities (i.e. structure, culture and technology) were purposely assessed in these organizations but the study did not highlight and assess knowledge-based capabilities thereby leaving a gap that needs to be filled. The findings reveals that there exist significant such requirements in most of the surveyed firms.

KM capabilities presents a measure of the degree to which an organization may be ready, prepared or willing to obtain benefits which arise from KM implementation. KM has become one of the most important trends in the businesses, yet many KM initiatives fail (Egbu *et al*., 2004). To understand the success and failure of KM, firms have to identify and assess the organizational capabilities required for the effort to prosper, which is the focus of this study. In this study, knowledge-based capabilities (creativity, intelligence, skills, motivation and communication) of Nigerian Quantity Surveying firms were assessed in the subsequent sections. Figure 1 shows the two main aspects of KMC for KM effectiveness as proposed by Cooparat *et al*., (2010) in their work.



Source: Cooporat et al. (2010)

Figure 1: KM capabilities Model

KNOWLEDGE-BASED CAPABILITY AREAS

Creativity

Creativity refers to human ability to produce relevant, new and previously unknown ideas (Sternberg, 2008). Of course, the word relevant infers that ideas cannot be absurd. In the context of organizational capabilities, creativity only refers to individual employees' creativity supporting an organization's capability of reaching its goals and not to the creativity shown only in tasks. Creative people in an organization use their resourcefulness to innovate flexible organizational structure that will enhance managing knowledge in the firm through redefining and reorganizing the structure at place (cook *et al*., 2000).

Intelligence

Intelligence refers to human capacity to solve problems not previously encountered. This is a general ability and is independent of the domain (Lubart 2009). According to Carlson *et al*., (2000), people who are creative are not necessarily intelligent or vice versa. Thus they are not connected, and can be seen as individual attributes. The intellect of individual people is an attribute that creates intellectual capital (knowledge) for an organization, and thus it can also be defined as being an attribute of organizational capability

Skills

Skill is referred to as an individual's specific capabilities to accomplish task successfully (Leonard 2002). An individual's skill is different from his intelligent and creativity, because they are domain specific. According to Kalaloski *et al*., (2001) knowledge and skills are the basic requirement for the tasks, even if the other aspects of the individual (e.g. creativity, intelligence etc) were in good place. Thus an understanding of the task specific skills of individual and personnel as a whole is an important factor when assessing the capabilities of an organization.

Motivation

According to Handy *et al*., (2009) Skills, knowledge, creativity etcetera are useless, if the person possessing them is not motivated to use them. Herzberg (2006) has concluded that, work situations contain dissatisfying or unhygienic factors as well as satisfying or motivating factors. However, Stewart *et al*., (2009) have found that, the motivation of the owner/manager correlates positively with success of a business. Similarly, Miner *et al*. (1990) concurred that, the motivation of individual people has a major effect on organizational success. With proper motivation in a firm, knowledge will be generated and shared intentionally therefore avoiding the risk of loosens such knowledge and improves firm efficiency.

Communication

Communication capabilities refer to an individual's ability to express himself/herself to the other people (Handy *et al*., 2009). The communication capabilities refer in the context of organizational capabilities as to those required at work; an individual may be communicative and clear in domestic situations, but he/she is unable to communicate at the level required at work, he/she does not increase the organizational capabilities. Without these, individuals are not able to share knowledge, and the organization is unable to learn (Nonaka and Takeuchi 2005).

RESEARCH METHOD

The questionnaires had been used for the purposed of collecting the primary data for this study from the target respondents, i.e. practicing quantity surveying firms resident in Kaduna and Kano states of Nigeria. The locations were categorized into two strata, Kaduna state as stratum A with 39 practicing firms and Kano state as stratum B with 12 practicing firms. Upon completion of the design and development of a structured questionnaire a pilot test of the instrument was conducted on 4 randomly selected firms, 2 firms from each stratum. Within two weeks, all the firms responded.

However, upon effecting all the necessary corrections that were vital the final questionnaires were administered to the required sample from each stratum as computed. A total of 78 questionnaires were distributed to both strata. 54 questionnaires to stratum A and 24 questionnaires to stratum B. In both strata, 51 usable questionnaires were retrieved indicating 65.38% effective response rate.

There are three (3) main parts in the questionnaire. The first part is an introduction to explain the purpose of the study as well as the definition and brief explanation of the subject of study. The second part contains questions relating to the general information about the respondents' demographic profile and organizational detail. The third part was designed to assess the KM capabilities of the Nigerian quantity surveying firms. The areas of capability were further grouped into Creativity related capabilities, Intelligence related capabilities, Skill related capabilities, Motivation related capabilities and Communication related capabilities as proposed by (Cooporat *et al*. 2010).

Among various KM capability factors identified from the literature, 41 factors were considered to be common to the findings of several research works. Therefore, in order to avoid handling of questionnaires with froth by the respondents which could result in the complete abandonment of the questionnaires by sighting very lengthy questions, the aforementioned 41 KM capability factors were adopted in the questionnaire since they appeared to be frequent.

The respondents were requested to choose the most appropriate answers. For each question the respondents had been provided with five options in form of likert scale (1 to 5), these are; extremely low, low, moderate, high and extremely high. The options indicate the extent to which each factors were attained in the firms. The first two show the options are low whereas the others show that it is high. In addition, the respondents were also encouraged to cite additional factors thought to be KM capabilities.

The following equations were used to find out the appropriate sample size from each stratum in order to make findings that are generalizable or applicable to the entire population as advanced by (Kapoor, 2010).

$$n_o = (p*q) / v^2 \quad \text{.....(1.1)}$$

$$n = n_o / [(1 + n_o / N)] \quad \text{.....(1.2)}$$

Where;

n_o = Sample size from an infinite population

p = Proportion of the characteristics being measured in the target population

q= complement of p, i.e. 1-p

V = maximum standard error allowed

N = population size

n = sample size

To maximize the sample size n, the value of p was set at 0.5 and q at 1- 0.5; the target population N is 39 and 12 for stratum A and B respectively; maximum standard error V was set at 10% or 0.1. Substituting the values into equations 3.1 and 3.2 above, the minimum required sample computed for both strata was 15.23 and 8.11. That is to say, the minimum sample required for stratum A and B is 15 and 8 firms respectively from the entire population.

The data obtained from the questionnaire survey was analyzed using the Statistical Package for Social Sciences (SPSS) software. The five knowledge-based capability areas were also ranked in accordance to their computed means values. Inferential statistics was further carried out using analysis of variance (one-way ANOVA) to compare the means scores of responses in order to determine the significance differences of the respondents' opinion in view of KM capabilities in the Nigerian Quantity Surveying firms and this was further confirmed using Tukey – HSD multiple comparison tests where it was applicable.

RESULTS AND DISCUSSION

This section assessed the different KM capability areas and ranked them accordingly based on their overall means values deduced from the responses. The analysis as can be seen from table 1 shows that Quantity Surveyors often have the necessary *skills* required for executing their cost management services as the computed average means value of that variable was ranked above all other factors with (4.36) mean score. This reveals that Quantity Surveyors have a broad knowledge background in various human endeavours ranging from Construction, Law, Management and Economics among others that usually enhance their performance in carrying out their services.

Creativity was ranked second with (4.18) mean value. This also concurred with the previous findings in Adeeko (2012) study which reveals that there is flexibility in the structure as well as the working arrangement in the consultancy firms in the Nigerian Construction Industry and this can only be attributed due to the innovativeness of most professionals in that sector. As envisage the creative people are good in initiating plain and conducive working environment that enhance both knowledge generation and sharing in an organization.

Communication was ranked third after Creativity. This shows to some extent that effective communication procedures do exist in the Quantity Surveying firms which often encourage knowledge acquisition and also ease knowledge sharing.

Intelligence was ranked closed to the last in the list of capability areas with (4.14) average means score. This implies that Quantity Surveying firms have low capability in initiating newer ways of carrying out their services in accordance to the speedy contemporary changes.

From the entire categories, *Motivation* has appeared to be diminutive when compare with the rest of the knowledge-based capability areas with the average means value of (3.61). This shows the extent of insufficient incentives provided to the personnel in Quantity Surveying firms as envisaged which will suppress their performance in view of knowledge generation as well as sharing.

Table 1: Overall Means of Various Capability Areas

Knowledge-based Capability Areas	***N***	***Average Mean***	***Capability***	***Rank***
Creativity	9	4.18	High	2
Intelligence	8	4.14	High	4
Skills	5	4.36	High	1
Motivation	9	3.61	Moderate	5
Communication	7	4.15	High	3

One - Way Anova

The Analysis of Variance (ANOVA) (see appendix 2) show that there is no significant difference in the opinions of the five groups of the respondents in terms of the highest academic qualification attained, starting from ND holders, HND holders, PGD holders, Degree holders and Masters Degree Holders. The calculated F ratio value of the issues under investigation is less than the F critical value of 2.60, F (4,185) = **0.181** and the calculated sig. (p) are greater than 0.05 level of tolerance **(0.948).** For significant difference to exist the F critical value must be more than 2.60 and the significance value (p) of one – way ANOVA should be not more than 0.05.

We can therefore conclude that, despite the different academic qualifications acquired by the respondents, their opinions of the questions investigated did not vary much. This implies that any result deduced from the analysis can be generalized to all groups of the respondents.

However, the Analysis of Variance (ANOVA) carried out to compare the means of responses based on the respondents' average years of experience in the construction work reveals that there is significant difference in the opinions of the five groups of the respondents in line with the questions under investigation. The calculated F ratio is greater than the F critical value of 2.60, F (4,185) = **5.724** and the calculated sig. (p) is less than 0.05 level of tolerance (**0.000**). For significant difference to happen as mentioned early the F critical value must be more than 2.60 and the significance value (p) of one – way ANOVA should be not more than 0.05.

The result provide strong empirical support that their exist a statistically difference in the opinions of the respondents in accordance to their working experiences in the construction industry ranging from 0 – 5 years, 6 – 10 years, 11 – 15 years, 16 – 20 years and over 20 years, it is therefore of paramount importance to further test the result in other to find out where the significant difference of their view lie - in using Tukey Post – Hoc multiple comparisons test.

Furthermore, From the result of Tukey Post Hoc test the responses of the people with 0 to 5 years working experience in the industry did not differed significantly with those having 11 to 15 years, 16 to 20 years and those having over 20 years of experience but varied significantly with the opinion of people with 6 to 10 years experience as the calculated sig. (p) value is (**0.001**) between the two groups.

The analysis further depicts visibly that person with 6 to 10 years experience have different view on the issue under investigation (KM capabilities of the Nigerian Quantity Surveying firms) with the remaining categories 0 to 5 years, 11 to 15 years, 16 to 20 years and over 20 years experience having computed significance value was below 0.05 level of tolerance. The (p) values are; 0.001, 0.010, 0.002, 0.001 respectively (see appendice 2).

CONCLUSION

The study reveals that Quantity Surveyors have positive perception toward the KM concept and most of them are in the view that Knowledge is a key resource to any firm that owns it and they are in the view that adopting and implementing KM in the Nigerian Quantity Surveying firms would enhance their ability in carrying out their cost management services. Despite the different academic qualifications earned by the respondents, they have the same view on the attainment of KM capabilities in the Nigerian Quantity Surveying firms. However, in spite of inadequate motivation as revealed from the findings, it can be concluded that Nigerian QS firms can go ahead to adopt and implement KM as obtained results in this research shows other capability areas are reasonably high in the firms.

RECOMMENDATIONS

It is recommended that, providing user friendly technology, human development through training and developmental workshops and also establishing flexible working arrangement will enhance the KM capabilities of the Nigerian Quantity Surveying firms.

The results indicated that motivation was the least in the KM capability areas attained in the firms, improving it through appropriate incentives would strengthen the KM capabilities in the Nigerian Quantity Surveying firms.

Since the study covered only few Nigerian states, it is recommended to widen the coverage of the research to other Quantity Surveying firms in other parts of the country In order to justify the recent findings.

This research was only restricted to Quantity Surveying consultancy firms in the Nigerian Construction Industry, it is therefore suggested to carry out similar assessment on Construction firms, Architectural and Engineering consultancy firms of the Nigerian Construction Industry and compares the results.

REFERENCES

[1] Adeeko, C. (2012). Assessment of Knowledge Management Requirements in the Consultancy firms of the Nigerian Construction Industry. Unpublished Thesis, Department of Quantity Survey. Ahmadu Bello University Zaria.

[2] Beckman,T. (1999). The Current State of Knowledge Management. In J. Liebowitz (Ed.), *Knowledge Management Handbook*. Boca Raton FL: CRC Press.

[3] Bhatt, G. D. (2001). Knowledge Management in Organisation. Examining the Interaction between Technology, Techniques and People, *Journal of Knowledge Management,* 5(1): 68-75.

[4] Carlson, N., Buskit, W. and Martin, J. N. (2000). *Psychology: The science of Behaviour*. USA. Allyn and Bacon.

[5] Cooparat, E. and Vesa, T. (2010).The Concept of Organizational Capabilities – A Foundational Analysis. *Journal of Information Systems*. 15(4). Available at www.bsi-km.com [Accessed 15th May 2012].

[6] Davis, R., Watson, P., & Man, C. (2007). Knowledge Management for the Quantity Surveying Profession. *Construction Informatics Digital Library*. 78(3): 155 - 157

[7] Demarest, M. (1997). Understanding Knowledge Management. *Long Range Planning*. 30(3). 374–384.

[8] Egbu, C. and Botteril, K. (2001). Information technologies for knowledge management: their usage and effectiveness, *Electronic Journal of Information Technology in Construction,* 7: 125.

[9] Egbu, C. O. (2004). Managing Knowledge and Intellectual Capital for Improved Organisational Innovations in the Construction Industry: an Examination of Critical Success Factor, *Engineering, Construction and Architectural Management (ECAM) Journal,* 11(5): 301-315.

[10] Gold, A.H., Malhotra, A., & Segars, A.H. (2001). Knowledge Management: An Organizational Capabilities Perspective. *Journal of Management Information Systems.* 18(1): 185–214.

[11] Grant, R.M. (1996). ‘‘Toward a knowledge-based theory of the firm’’, *Strategic Management Journal,* Vol. 17, Winter Special Issue, pp. 109-22.

[12] Gray, P.H. (2001). A Problem-Solving Perspective on Knowledge Management Practices. *Decision Support Systems*. 31. 87–102.

[13] Handy, C. (2009). Understanding Organizations. 4th ed. London. Penguin Books.

[14] Herzberg, F. (2006). *Work and the nature of man*. Cleveland, USA: World Publishing Company.

[15] Kalaloski, V. and Soariluoma, P. (2001). Taxi Drivers: Exceptional memory for Street Names. *Memory and Cognition*. 29(2): 634-638.

[16] Kapoor, V. K. (2010). *Modern Approach to Fundementals of Statistics for Business and Economics.* New Delhi: Chand & Sons Publishers

[17] Kazeem E. M., Behnaz, M. and Abdar, E. (2012). Knowledge Management capabilities and Organizational performance. *Interdisciplinary journal of contemporary research in Business.* 3(11): 781-790.

[18] Lee, H., & Choi, B. (2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of Management Information Systems*, 20(1): 179–228.

[19] Lee, Y., & Lee, S. (2007). Capabilities, Processes & Performance of Knowledge Management: A Structural Approach. *Wiley Interscience*. 17(1): 21–31.

[20] Leidner, D. and Alavi, M. (1999). Knowledge Management Systems: Issues, Challenges and Benefits, *Communications of the Association for Information Systems*, 1(2).

[21] Leonard-Barton, D. (2002) Core Capabilities and Core Rigidities: A paradox in managing new product development. *Strategic Management Journal.* 13(2): 11-25.

[22] Lubert, R. (2009). Tacit Knowledge and Knowledge Management: The Keys to Sustainable Competitive Advantage. *Organizational Dynamics.* 29(4): 164–178

[23] Malone, D. (2002). Knowledge Management: A Model for Organizational Learning. *International Journal of Accounting Information Systems*. 3. 111–123.

[24] Miner, J. B. (1990). Contrasting and Overlapping Motivational Patterns. *Journal of Business Venturing.* 5(4): 221-234.

[25] Momeni, M., Abbas, M, Shaabani, E. and Ghasemi, R. (2011). A conceptual Model for Knowledge Management Process, Capabilities and Core Competencies: The Case of Iranian Automative Industry. *European Journal of Social Sciences*. 22(4): 473-489.

[26] Nonaka, I. and Takeuchi, H. (1995). *the knowledge Creating Company,* New York, Oxford University Press.

[27] O’Dell, C., & Grayson, J. (1999). Knowledge Transfer: Discover your Value Proposition. *Strategy & Leadership*. 27(2). 10–15.

[28] RICS (1992). Royal Institute of Chartered Surveyors. *Quantity Surveying 2000.*

[29] Sodiya, A.S., Adeleye, B.A., Dansu, B.M. and Onashoga, S.A. (2006). Assessment of knowledge Management Capabilities of Nigerian Banking Institutions. Procedings of the 2nd Conference on Science and National Development. Abeokuta. Nigeria.
[30] Sternberg, R. J. (2006). *The Nature of Creativity.* Cambridge, UK. Cambridge University Press.

[31] Stewart, T. A. and Watson, W. E. (2009). *Intellectual Capital – The wealth of organization*. London, UK: Brealey publishing company.
[32] Stonehouse, G. H., & Pemberton, J. D. (1999). Learning and Knowledge Management in the Intelligent Organization. Participation & Empowerment: *An International Journal*. 7(5): 131–144.
[33] Webb, S. P. (1998). *Knowledge Management: Linchpin of Change*. The Association for Information Management (ASLIB), London.
[34] Wu, I., and, Lin, H. (2009). A strategy-based process for implementing knowledge management: An integrative view and empirical study. *Journal of the American Society for Information Science and Technology*, 60(4): 789–802.
[35] Zack, M. H. (1999). Developing a knowledge strategy. *California Management Review*, 41(3): 125–145.

APPENDIX 1

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May, 2014.

QUESTIONNAIRE SURVEY

Dear Respondent,

ASSESSMENT OF KNOWLEDGE MANAGEMENT CAPABILITIES OF THE NIGERIAN QUANTITY SURVEYING FIRMS

This questionnaire is designed to capture relevant information on the above mentioned research work. The topic is being studied as an academic work and also as a contribution to managing knowledge in the quantity surveying firms.

Knowledge management (KM) is a systematic management approach to identify and capture the "knowledge assets'' of a firm so that they can be fully exploited and protected as a source of competitive advantage whereas KM capabilities are organizational mechanisms for generating knowledge continuously. They can encourage acquiring knowledge, protecting knowledge and facilitating knowledge sharing in an organization.

The questionnaire consists of two sections:

Section A: Respondent's profile

Section B: KM capabilities

Your response will be treated with utmost confidentiality and shall be used strictly for academic purpose only.

Yours Faithfully,

Umar Isma'il

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APPENDIX 1

QUESTIONNAIRE

Section A: Personal Data

Kindly tick (√) as appropriate.

[1] Average years of experience of respondent.

0 – 5 years [ ] 6 – 10 years [ ] 11 – 15 years [ ] 16 – 20 years [ ] Over 20 years [ ]

[2] Highest level of educational qualification attained.

Ordinary National Diploma (OND) [ ] Higher National Diploma (HND) [ ]

Post Graduate Diploma (PGD) [ ] First Degree [ ] Master Degree [ ]

Doctorate Degree [ ] others, (please specify) [ ]…….....

[3] Highest level of professional qualification attained

Fellow [ ] Corporate [ ] Probational [ ]

Others, (please specify) [ ] …….....

[4] Rank/ Designation/Position in the firm

Principal Partner [ ] Partner [ ] Senior QS [ ] QS [ ]

others, (please specify) [ ] …….....

[5] Number of employees in the firm

5 – 10 [ ] 11 – 20 [ ] above 20 [ ]

Section B: Knowledge Management Capabilities

1. How familiar are you with the term KM concept?

a. Strongly familiar [ ] b. Familiar [ ] c. Not familiar [ ] d. Strongly not familiar [ ]

2. Do you recognize knowledge as a key resource?

a. Definitely agree [ ] b. Agree [ ] c. Disagree [ ] d. Definitely disagree [ ]

3. Do your firm have a plan on KM concept?

a. Completely agree [ ] b. Agree [ ] c. Disagree [ ] d. Completely disagree [ ]

Group A

The following are measures for assessing the capabilities of QS firms, using a numbered scale of 1 to 5 where 1 = Extremely low and 5 = Extremely high, please tick the appropriate box to indicate the degree of agreement to the statement on the left.

S/No	MEASURES OF KM CAPABILITIES FOR NIGERIAN QS FIRMS	1	2	3	4	5
1	Guidelines to embrace new ideas					
2	Reluctance to change the routine					
3	Broad knowledge background of employees					
4	Stakeholders commitment and competence					
5	Flexibility in the structure of your firm					
6	Divergent thinking ability of employees					
7	Solving problems through irregular means					
8	Extent to which employees employ logic to explore new ideas					
9	Employees' tolerance for ambiguity and discomfort					

Group B

The following are measures for assessing the capabilities of QS firms, using a numbered scale of 1 to 5 where 1 = Extremely low and 5 = Extremely high, please tick the appropriate box to indicate the degree of agreement to the statement on the left.

S/No	MEASURES OF KM CAPABILITIES FOR NIGERIAN QS FIRMS	1	2	3	4	5
1	Employees capacity to learn					
2	Enhance attitude of employees toward any complicated work					
3	Co-workers concentration and stickiness to their task(s)					
4	Performance of People in generating knowledge					
5	Employees can do attitude to everything (optimistic)					
6	Using competencies in new rather than just familiar circumstances of co-workers					
7	The way employees deal with new ideas/knowledge					
8	Commitment from relevant parties					

The following are measures for assessing the capabilities of QS firms, using a numbered scale of 1 to 5 where 1 = Extremely low and 5 = Extremely high, please tick the appropriate box to indicate the degree of agreement to the statement on the left.

S/No	MEASURES OF KM CAPABILITIES FOR NIGERIAN QS FIRMS	1	2	3	4	5
1	Grasping new ideas and integrate them into desired results					
2	Patience and persistence of people to troubleshoot issues					
3	Employees general skills					
4	Employees accomplishment to their specific task					
5	Ability of people in handling their job/tasks					

Group D

The following are measures for assessing the capabilities of QS firms, using a numbered scale of 1 to 5 where 1 = Extremely low and 5 = Extremely high, please tick the appropriate box to indicate the degree of agreement to the statement on the left.

S/No	MEASURES OF KM CAPABILITIES FOR NIGERIAN QS FIRMS	1	2	3	4	5
1	User friendly Technology					
2	Acknowledgement of any superior performance					
3	Recognition of employees' needs					
4	Reward when dealt with new problems encountered successfully					
5	Efficiency of the performance appraisal system in your firm					
6	Incentives provided to employees					
7	Supportive IT infrastructure					
8	Staff Training and Development					
9	Flexibility in working arrangement					

Group E

The following are measures for assessing the capabilities of QS firms, using a numbered scale of 1 to 5 where 1 = Extremely low and 5 = Extremely high, please tick the appropriate box to indicate the degree of agreement to the statement on the left.

S/No	MEASURES OF KM CAPABILITIES FOR NIGERIAN QS FIRMS	1	2	3	4	5
1	Openness between people within the firm					
2	Willingness of employees to accept and share new knowledge					
3	Attentiveness of people when capturing knowledge					
4	Receptiveness of employees to new ideas/knowledge					
5	Keenness of co-workers to explore unknown ideas/knowledge					
6	Trust between the parties					
7	Willingness to adopt idea originated elsewhere					

In your own opinion, suggest other factors that will help to assess the capabilities of Nigerian QS firms.

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APPENDIX 2 (ANOVA)

Descriptive statistics of Anova based on Academic Qualification

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
OND	38	4.0255	0.44053	0.07146	3.8807	4.1703	3.18	4.73
HND	38	4.0071	0.41003	0.06652	3.8723	4.1419	3.24	4.59
PGD	38	4.0168	0.43387	0.07038	3.8742	4.1595	3.33	4.67
DEGREE	38	4.0524	0.39149	0.06351	3.9237	4.1810	3.27	4.64
MASTERS	38	4.0774	0.40249	0.06529	3.9451	4.2097	3.33	4.50
Total	190	4.0358	0.41248	0.02992	3.9768	4.0949	3.18	4.73

Analysis of variance based on Academic Qualification

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.125	4	0.031	0.181	0.948
Within Groups	32.031	185	0.173		
Total	32.156	189			

Descriptive statistics of Anova based on Years of Experience

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
0 - 5 yrs	38	4.0571	0.40882	0.06632	3.9227	4.1915	3.28	4.67
6 - 10 yrs	38	3.5526	0.92114	0.14943	3.2499	3.8554	2.00	5.00
11 - 15 yrs	38	3.9763	0.47558	0.07715	3.8200	4.1326	3.20	4.60
16 - 20 yrs	38	4.0368	0.41812	0.06783	3.8994	4.1743	3.40	4.60
Over 20 yrs	38	4.0605	0.38901	0.06311	3.9327	4.1884	3.29	4.59
Total	190	3.9367	0.58732	0.04261	3.8526	4.0207	2.00	5.00

Analysis of variance on Experience

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.180	4	1.795	5.724	0.000
Within Groups	58.015	185	0.314		
Total	65.195	189			

Multiple Comparisons of Responses based on Work Experience in the Construction Industry

Tukey HSD

(I) Average Years of Experience	(J) Average Years of Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
0 - 5 yrs	6 - 10 yrs	0.50447	0.12847	0.001	0.1506	0.8584
	11 - 15 yrs	0.08079	0.12847	0.970	-0.2731	0.4347
	16 - 20 yrs	0.02026	0.12847	1.000	-0.3337	0.3742
	Over 20 yrs	-0.00342	0.12847	1.000	-0.3573	0.3505
6 - 10 yrs	0 - 5 yrs	-0.50447	0.12847	0.001	-0.8584	-0.1506
	11 - 15 yrs	-0.42368	0.12847	0.010	-0.7776	-0.0698
	16 - 20 yrs	-0.48421	0.12847	0.002	-0.8381	-0.1303
	Over 20 yrs	-0.50789	0.12847	0.001	-0.8618	-0.1540
11 - 15 yrs	0 - 5 yrs	-0.08079	0.12847	0.970	-0.4347	0.2731
	6 - 10 yrs	0.42368	0.12847	0.010	0.0698	0.7776
	16 - 20 yrs	-0.06053	0.12847	0.990	-0.4144	0.2934
	Over 20 yrs	-0.08421	0.12847	0.965	-0.4381	0.2697
16 - 20 yrs	0 - 5 yrs	-0.02026	0.12847	1.000	-0.3742	0.3337
	6 - 10 yrs	0.48421	0.12847	0.002	0.1303	0.8381
	11 - 15 yrs	0.06053	0.12847	0.990	-0.2934	0.4144
	Over 20 yrs	-0.02368	0.12847	1.000	-0.3776	0.3302
Over 20 yrs	0 - 5 yrs	0.00342	0.12847	1.000	-0.3505	0.3573
	6 - 10 yrs	0.50789	0.12847	0.001	0.1540	0.8618
	11 - 15 yrs	0.08421	0.12847	0.965	-0.2697	0.4381
	16 - 20 yrs	0.02368	0.12847	1.000	-0.3302	0.3776

*. The mean difference is significant at the 0.05 level.

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