

ASSESSING THE INFLUENCE OF KNOWLEDGE MANAGEMENT
ENABLERS ON ORGANISATIONAL PERFORMANCE OF
CONSTRUCTION CONSULTANCY FIRMS

By

Mustapha Yusuf FARUQ

DEPARTMENT OF QUANTITY SURVEYING, FACULTY OF
ENVIRONMENT DESIGN, AHMADU BELLO UNIVERSITY, ZARIA,
NIGERIA.

AUGUST, 2023

ASSESSING THE INFLUENCE OF KNOWLEDGE MANAGEMENT
ENABLERS ON ORGANISATIONAL PERFORMANCE OF
CONSTRUCTION CONSULTANCY FIRMS

By

Mustapha Yusuf FARUQ

BSc. QUANTITY SURVEYING (ABU) 2017

P18EVQS8026

A DISSERTATION SUBMITTED TO THE SCHOOL OF
POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY,
ZARIA

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF A MASTER OF SCIENCE DEGREE IN QUANTITY
SURVEYING.

DEPARTMENT OF QUANTITY SURVEYING, FACULTY OF
ENVIRONMENT DESIGN, AHMADU BELLO UNIVERSITY, ZARIA,
NIGERIA.

AUGUST, 2023

DECLARATION

I declare that the work in this dissertation entitled “**Assessing The Influence of Knowledge Management Enablers on Organisational Performance of Construction Consultancy Firms**” has been carried out by me in the Department of Quantity Surveying, Ahmadu Bello University Zaria under the supervision of Prof. M. Abdulrazaq.

The information obtained from literature has been properly acknowledged in the text and a list of references provided. No part of this dissertation was formerly presented for another degree or diploma at this or any other institution.

MUSTAPHA YUSUF FARUQ

DATE

CERTIFICATION

This dissertation titled “assessing the influence of knowledge management enablers on organisational performance of construction consultancy firms” meets the requirement of the regulation governing the award of the degree of Masters in Quantity Surveying department of Ahmadu Bello University, Zaria, and is approved for its factual presentation and contribution to knowledge.

Prof. M. Abdulrazaq

Chairman Supervisory Committee

Signature

Date

Dr. B.A. Kolo

Member, Supervisory Committee

Signature

Date

Dr. B.A. Kolo

Head of Department

Signature

Date

Prof. M.N. Shuaibu

Dean, School of Postgraduate Studies

Signature

Date

DEDICATION

This dissertation is dedicated to my Late mother Alhaja Khadijat Faruq, may Allah forgive all her shortcomings (Amin).

ACKNOWLEDGEMENT

I return all Praises to God Almighty who has guided and made it possible for me to successfully complete my Master's degree programme. I am also deeply grateful to my supervisory team Prof. M. Abdulrazaq and Dr. B.A Kolo whom during this period have not only kept me on my pathway, but offered me vital advice and support.

My profound appreciation goes to the staff of the Department of Quantity Surveying for their ardent academic supervision during my study at Ahmadu Bello University, Zaria. Kind gratitude and sincere acknowledgement to the construction professionals who participated in filling out the questionnaire and provided valuable information for this study. Countless thanks to Dr. Hassan Ahmadu for his support during the course of the study.

Special thanks to my Father (Alhaji Faruq Yusuf Opeloyeru) and siblings for their immense contribution and motivations given to me during my programme.

I acknowledge the effort of my roommate and course mates, Nnamdi Stanley, Mr. Jefferson, Mallam Aliyu Jibril, Mallam Yusuf Alaya, Mfreke Udoh just to mention but few for their suggestions, contributions and encouragement towards the successful completion of the M.Sc. programme.

ABSTRACT

Construction firms in contemporary times have evolved into structurally standard organisations where there is the understanding of knowledge management enabling factors as an essential management philosophy that drives organisational performance. This study sought to analyse specifically, the influence of knowledge management enablers on organisational performance of construction consultancy firms. Using a quantitative research approach, this research examined the relationship between knowledge management enabling factors and organisational performance in consultancy firms. One hundred and twenty-one (121) construction firms in Nigeria completed the questionnaires used for the research. Mean score was used to identify the knowledge enabling factors and organisational performance dimensions dominant in construction firms while multiple regression analysis was used to assess the influence of knowledge management enablers on organisational performance of construction consultancy firms. The findings from this study revealed that the different knowledge management enabling factors mentioned in this study, after being analyzed for the effectiveness of the construction firm's performance, have significant positive relationship with one another. The study further revealed that most of the identified knowledge management enabling factors significantly influence (19 Of 31) organisational performance with improved employees' professional skills being influenced more by six factors followed by financial stability with five factors influencing it. Achieving sustained profit is the least influenced with two factors. The study concluded that consultancy firms practice majority of the KM enabling factors in their organisation with no fewer than Twenty – Eight (28) factors having a weighted mean that is above average score and it was agreed that increasing firm's reputation in the construction market should be the top priority and starting point for improved performance followed by improving employee's professional skills. The findings from this study implied that Knowledge management enablers are capable of improving firm's performance; therefore, consultancy firms should practice it more to reap wide range of benefits that comes from its practice including gaining competitive advantage.

Keywords: Knowledge Management, Knowledge Management Enablers, Construction Consultancy Firms, Organisational Performance.

TABLE OF CONTENTS

DECLARATION	iv
CERTIFICATION	v
DEDICATION.....	vi
ACKNOWLEDGEMENT	vii
ABSTRACT.....	viii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background to the Study	1
1.2 STATEMENT OF RESEARCH PROBLEM	3
1.3 NEED FOR THE STUDY	4
1.4 AIM AND OBJECTIVES	5
1.4.1 Aim.....	5
1.4.2 Objectives	5
1.5 SCOPE AND LIMITATION	6
1.5.1 Scope	6
1.5.2 Limitation	6
CHAPTER TWO	7
LITERATURE REVIEW.....	7
2.1 Concept of Knowledge Management.....	7
2.2 Types of Knowledge	8
2.2.1 Explicit knowledge.....	9
2.2.2 Tacit knowledge	10
2.2.3 Implicit knowledge.....	10
2.3 Definitions of Knowledge Management (KM).....	11
2.4 Knowledge Management Approaches	12
2.5 Knowledge Management Enablers	14
2.6 Knowledge and Consultancy Firms	18
2.6.1 The Essential Characteristics of Consultancy Firms	18
2.7 Reasons for using KM to enhance Consultancy Firm’s Performance	21
2.8 Benefits of Knowledge Management to Consultancy Firms	21
2.9 Performance	24
2.10 Performance Measurement.....	25
2.11 Performance Measures/Indicators	26

2.12 Importance of Performance Measurement	26
2.13 Relationship Between Knowledge Management Organisational Performance ..	27
2.14 Review of Knowledge Management Studies in Construction Industry	28
CHAPTER THREE	31
RESEARCH METHODOLOGY	31
3.1 Research Design.....	31
3.2 Population of The Study.....	32
3.3 Sample Size.....	32
3.4 Sampling Technique.....	33
3.5 Data Collection.....	34
3.6 Data Analysis Technique	36
3.7 Validation and Generalisation.....	37
CHAPTER FOUR.....	38
DATA PRESENTATION, ANALYSIS & DISCUSSIONS OF RESULTS.....	38
4.1 Response Rate	38
4.2 How research objectives were achieved	38
4.3 The Profile of Firms Involved in the Study	39
4.4 Extent of Practice of Knowledge Management Enabling Factors (KMEFs) In Consultancy Firms	41
4.5 Assessing the various Organisational Performance Measures in Consultancy Firms	44
4.6 Assessing the influence of Knowledge Management Enabling Factors (KMEFs) on Organisational Performance.....	45
4.6.1 Financial stability	45
4.6.2 Sustained profit.....	48
4.6.3 INCREASING NEW CLIENTS	51
4.6.4 Retaining Current Clients	54
4.6.5 Employee Retention	57
4.6.6 INCREASED MARKET SHARE.....	60
4.6.7 IMPROVEMENT IN EMPLOYEES' PROFESSIONAL SKILLS	63
4.6.8 INCREASED REPUTATION IN CONSTRUCTION MARKET.....	67
Discussion.....	70
CHAPTER FIVE	74
SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	74

5.1 Summary of Findings	74
5.2 Conclusion.....	75
5.3 Recommendations	75
5.4 Contribution to Knowledge.....	76
REFERENCES	77
APPENDIX.....	91

LIST OF TABLES

Table 1: Cronbach's Alpha Reliability Statistics	37
Table 2: Questionnaire Response Rate	38
Table 3: Achieving Research Objectives	38
Table 4: Profile of firms	39
Table 5: Knowledge Management Enabling Factors (KMEFs) Practice in Consultancy firms	42
Table 6: Assessing the various Organisational Performance Measures in Consultancy Firms.....	45
Table 7: Model Summary^f.....	46
Table 8: Anova^a.....	46
Table 9: Coefficients	48
Table 10: Model Summary.....	49
Table 11: Anova^a.....	49
Table 12: Coefficients	51
Table 13: Model Summary.....	52
Table 14: Anova^a.....	52
Table 15: Coefficient.....	53
Table 16: Model Summary.....	54
Table 17: Anova^a.....	55
Table 18: Coefficient.....	57
Table 19: Model Summary.....	58
Table 20: Anova^a.....	59
Table 21: Coefficient.....	60
Table 22: Model Summary.....	61
Table 23: Anova^a.....	62
Table 24: Coefficient.....	63
Table 25: Model Summary.....	64
Table 26: Anova^a.....	65
Table 27: Coefficient.....	66
Table 28: Model Summary.....	68
Table 29: Anova^a.....	68
Table 30: Coefficient.....	70

LIST OF FIGURES

Figure 2.1 1: Data-information-knowledge hierarchy/relationship source: Corbin, Dunbar, and Zhu (2007).....	7
Figure 2.1 2: Theoretical Model	28

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The construction industry like many other industries is being transformed to meet the new demands of the twenty-first century. As the business environment within which the construction organisations or companies operate continues to change rapidly. Organisations or companies that fail to adapt and respond to the complexity of the new business environment tend to experience survival problems (Lee et al. 2001). Nigerian construction industry (constituted by contractor organisations, consultancy firms etc.) is currently confronted with performance challenges which contributes to the decline of the national GDP. The level of this performance challenge is shown by the available records of project failure in building, roads and other infrastructural construction project (Nwachukwu and Nzotta, 2010).

According to Cox and Thomson (1997), construction consultants have for a long time been blamed for inefficiency in their construction project delivery services and have failed to meet their clients' needs. The challenges of how to control consultancy firms' business operations effectively become more difficult, due to the increasing pressure of clients, which would require better products in shorter durations but fewer resources (Dave and Koskela, 2009). Thus, consultancy firms need to make timely and reasonable management-related improvements in business operations. Facing new threats and challenges in today's construction industry, consultancy firms are seeking new solutions in business operations (Dave and Koskela 2009).

Based on effective management strategies, consultancy firms could match their business activities to the changing environment and maintain their competitive advantages better

(Tan et al. 2012). Because of its inimitable, non-substitutable, valuable and rare characteristics (Alwis and Hartmann, 2008), knowledge assets are becoming precious organizational assets (Teerajetgul and Charoenngam, 2006), which could enable consultancy firms to prevent the recurrence of similar mistakes and offer innovative solutions to satisfy the increasing requirements of sophisticated clients (Li *et al.*, 2017). Nevertheless, as engineering and construction activities are increasingly becoming knowledge-intensive (Chen and Mohamed, 2008), it is not easy for consultancy firms to manage knowledge assets as organisational assets, therefore understanding of how to utilize knowledge assets in these firms is crucial.

In today's knowledge economy, to improve organisational capabilities of managing knowledge assets, consultancy firms need to develop proper organisational mechanisms for fostering knowledge consistently and intentionally (Ichijo *et al.*, 1998), whose measures may be referred to as knowledge management enabling factors (KMEFs). Likewise, consultancy firms cannot maintain their competitive advantages in today's construction environment without any improvement of organisational performance. Unfortunately, these firms are faced with many difficulties in developing in their organisational operations as well as organisational performance, due to the increasing shortage of competent employees (Nguyen *et al.*, 2004). As being a vital driving force of organisational change and wealth creation (Chase, 1997), knowledge management may not only enable consultancy firms to deal with the shortage of competent employees (Molnar *et al.*, 2011) but also help them to develop stably.

Previous studies have investigated the relationship between organisational performance and the various Knowledge Management constructs such as KM capability, KM enablers and KM processes. For example, Martinez-Conesa *et al.*, (2017) worked on open innovation of Small and Medium Enterprises (SMEs) and its influence on KM capability

with part of their findings being environmental dynamism and KM practices having a direct influence on open innovation for Spanish SMEs. Likewise, Manfredi Latilla *et al.*, (2018) explored how KM processes affects the survival of art and crafts organisations in the creative industry thereby coming up with assertions that knowledge acquired, retained and transferred by the craftsmen become crucial for their profitability in the long run. Payal *et al.*, (2019) asserted that KM enablers need to be integrated into the firm's business operations for superior performance. The references made to the aforementioned literature is an indication that adopting Knowledge Management in tackling problem of performance in organisations has been proven to yield the desired results.

1.2 STATEMENT OF RESEARCH PROBLEM

According to Shehu *et al.*, (2020), consultancy firms' quality of service delivery is not up to their client's expectation signifying a lag in performance. They are still performing below expectation and thereby struggling to survive in the competitive business market due to poor knowledge application/management and some other related factors (Kadiri and Ayodele, 2013; Ogbu, 2015; Ojo *et al.*, 2017; Osunsanwo, 2019). Efficient performance of firms offering consultancy services in construction industry is a critical research focus that draws considerable attention from both academics and practitioners. Majority of the previous studies on performance of consultancy firms in Nigeria focused on service quality (SERVQUAL) (Kadiri and Ayodele, 2013; Usman *et al.*, 2012), client satisfaction (Oke *et al.*, 2010; Oyewobi *et al.*, 2012) and the use of balance scorecard as a performance measurement framework leaving out the knowledge management initiative.

Recognizing the importance of knowledge as an essential factor for performance, many organizations have allocated a budget for knowledge management (KM) programs (Lee and Choi, 2003). Kharabsheh *et al.*, (2012) argued that knowledge management practices

including (communication, the ability to create new knowledge, acquisition, policies and strategies of KM, and training) which are known as knowledge enablers affect organisational performance.

There exist, abundant research work on knowledge management as it affects or relates to organisation (Tan *et al.*, 2006; Teerajetgul *et al.*, 2009; Kanapeckiene *et al.*, 2010; Ruan *et al.*, 2012; Zhang and Ng 2012a, 2012b, 2013; Cooke 2013; Kivrak *et al.*, 2014; Al ashwal *et al.*, 2016; Yu and Yang 2016; Dang *et al.*, 2018; Dang *et al.*, 2019). However, none had made explicit, the enabling factors for fostering knowledge management practices in construction consultancy firms in Nigeria and its influence on organisational performance. Thus, a study which could provide some useful information to improve organisational performance of these firms is necessary.

1.3 NEED FOR THE STUDY

Knowledge Management (KM) reflects the growing realisation that it is a core business concern, particularly in the context of the emerging knowledge economy, where the know-how of a company is becoming more important than the traditional sources of economic power (capital, land, etc.) (Drucker, 1993; Scarbrough & Swan, 1999). This study seeks to provide construction consultancy firms with informed data on which Knowledge Management enablers (Factors) to focus on in achieving improved organisational performance.

Knowledge Management Enablers has become the key factors that determines how effectively a firm's knowledge asset is being managed. Focusing on the right enablers can provide the much needed improved performance in consultancy firms. Successful application and practice of KM enablers would translate to firms becoming more

innovative, harmonize its efforts better, commercialise new and useful ideas quickly, foresee surprises and become more responsive to market change.

Additionally, firms that effectively manages her knowledge resources can expect to reap a wide range of benefits such as reduced manpower and infrastructure costs as well as improved corporate efficiency, effectiveness and client/customer services.

1.4 AIM AND OBJECTIVES

1.4.1 Aim

The aim of this research is to assess the influence of Knowledge Management Enabling Factors (KMEFs) on organisational performance in construction consultancy firms in Nigeria.

1.4.2 Objectives

The objectives through which the above stated aim was achieved are as follows:

- i. To identify Knowledge Management Enabling Factors (KMEFs) and organisational performance measures in construction industry.
- ii. To assess the practice of Knowledge Managemnet Enabling Factors (KMEFs) in consultancy firms.
- iii. To assess the various organisational performance measures in construction consultancy firms.
- iv. To assess the influence of Knowledge Management Enabling Factors (KMEFs) on organisational performance measures.

1.5 SCOPE AND LIMITATION

1.5.1 Scope

This research focused only on the enabling factors of knowledge management as a means of improving organisational performance as there are other aspect of knowledge management which could impact directly, the performance of an organisation such as knowledge asset, knowledge retrieval, knowledge transfer etc. Likewise, the study targeted consultancy firms rendering professional services in the industry, other stakeholders in the construction industry were not considered.

1.5.2 Limitation

Limitations relate to the weakness of a study that are outside the researcher's control (Leedy and Ormrod, 2010). One of the limitations of this study is the nature of the instrument for data collection as it has to do with attitudes and opinions of respondents regarding knowledge management practices and the performance of their respective firms, therefore the accuracy of results depends on the accuracy of the information supplied by the respondents. Also, respondents are professionals working in firms based in the Nigerian construction industry which could affect the generalizability of the results.

CHAPTER TWO

LITERATURE REVIEW

2.1 Concept of Knowledge Management

In order to start a discussion on KM and to understand what KM is, it is necessary to understand the main definitions and aspects of KM theory. The first aspect to be highlighted is to distinguish in the literature on KM concepts such as data, information and knowledge (Corbin *et al.*, 2007). Information is seen as accumulated data in some place, while knowledge resides in human brains and involves the experience of the person and his or her personal beliefs which influence the judgment process of this person (Egbu *et al.*, 1999).

The most common representation of knowledge is placed on top of conceptual pyramid, the foundation of which is data (Davenport 1997). The knowledge pyramid represents the usual concept of knowledge transformations, where data is transformed into information, and information is transformed into knowledge (see Figure 2.1.1).

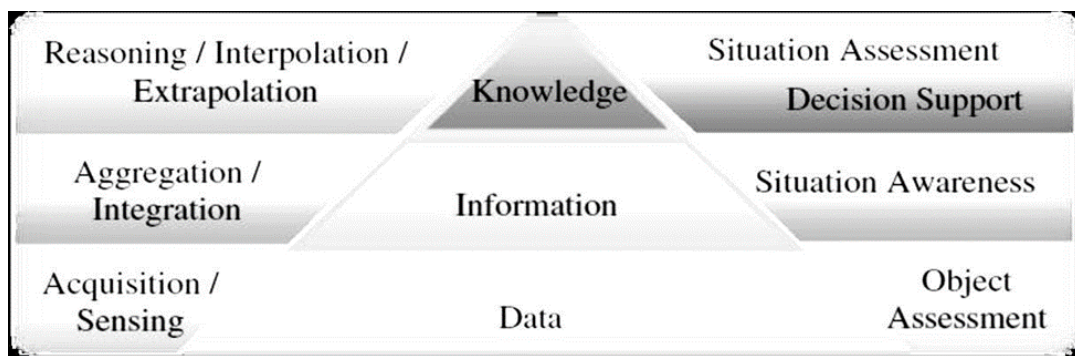


Figure 2.1 1: Data-information-knowledge hierarchy/relationship source: Corbin, Dunbar, and Zhu (2007).

Data is defined as facts without context; when it is further organised and analysed, data becomes 'information' and only when information is put into a logical and understandable context can it become 'knowledge' (Gunnlaugsdottir, 2003). Data, from Davenport and Prusak (2000) point of view is generally identified as a set of discrete facts about events. Most organisations capture significant amounts of data in highly structured databases. The core value activity around business data is the ability to analyse, synthesis, and then transform the data into information and knowledge. The concept of knowledge is different from information. Information, which can be attributed with facts about the real world, is the core of knowledge. Information is the outcome of capturing and providing context to experiences and ideas. Drucker (1993) states that; "Knowledge is information that changes something or somebody, either by becoming grounds for actions or by making an individual (or an institution) capable of different or more effective action". This makes it clear that knowledge is naturally personal and intangible. Information, on the other hand, is tangible and available to anyone who is willing to find it. For knowledge to be of value it must be focused and current, tested and shared. This caring for and sharing of knowledge has become one of the most debated topics in business. It is called 'knowledge management'.

2.2 Types of Knowledge

The complexity of KM is largely attributed to the fact that knowledge is multidimensional. Davenport and Prusak (2000) define knowledge as a "fluid mix of framed experiences, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms".

Nevertheless, and despite the more purist philosophical conceptualizations of knowledge, the literature in KM distinguishes different types of knowledge in order to be able to propose its management. KM authors divide and typify knowledge in different ways. For example, some authors differentiate technical and strategic types, (Liebeskind, 1996). Grant (1996) proposes practical knowledge, intellectual knowledge (scientific, humanistic and cultural), pastime knowledge (news, gossip, and stories) and undesired knowledge. Garvin (1998) and Brown & Duguid (2000) focused on issues related to problem-solving knowledge in work practices and knowledge associated with coordination and tactical issues. Finally, the more common characterization of knowledge is tacit knowledge, explicit knowledge and implicit knowledge (Nonaka and Takeuchi 1995; Nonaka and Konno, 1998; Srikantaiah and Koenig, 2000; Cavusgil *et al.*, 2003).

2.2.1 Explicit knowledge

Explicit knowledge can be formalised and represented, and thus articulated in formal languages. This is the type of knowledge most researchers of KM equate to information (e.g. Wilson, 2002). As information, explicit knowledge can be easily stored, retrieved, shared and disseminated within organisations. According to Srikantaiah and Koenig (2000) some examples of explicit knowledge are found in commercial publications, e-mail, internet, GroupWare, intranets, database, organisational business records and self-study material. The management of explicit knowledge usually includes the creation, generation or acquisition of that knowledge and should be supported by a number of information and communication technologies (ICT). The process includes:

1. Codification and organisation;
2. Access and dissemination; and
3. Use and application.

2.2.2 Tacit knowledge

According to Ryle (1984), the distinction between tacit knowledge and explicit knowledge has sometimes been expressed in terms of knowing-how and knowing-that respectively; or in terms of a corresponding distinction between embodied knowledge and theoretical knowledge (Barbiero, 2002). The term “tacit knowledge” was first coined by Polanyi (1958) and refers to hidden or non-verbalised intuitive and unarticulated knowledge (Cavusgil *et al.*, 2003). More pragmatically, tacit knowledge can be described as experience that is embedded in an individual such as perspective and inferential knowledge. It includes insights, hunches, intuitions, and skills that are highly personal and difficult to formalize, and as a result are hard to communicate or share with others.

Tacit knowledge therefore cannot be easily codified and thus is not readily transferable from one person to another. It can only be “learned” by close association over an extended period of time (Nunes *et al.*, 2005). Srikantaiah and Koenig (2000) came to the conclusion that, the core differentiation between information management (IM) and KM lies in the assumption that tacit knowledge forms the basis of intellectual capital of an organisations and needs to be expressed and managed. Traditionally, IM authors do not consider tacit knowledge in their frameworks and models and focus on explicit knowledge alone. Explicit knowledge is relatively uncomplicated; therefore, it is with tacit knowledge that KM enters into a new and unexplored field. According to Srikantaiah and Koenig (2000) and Nonaka (1991) explicit and tacit knowledge have a symbiotic relationship where each contribute or benefit from the other. In order for KM to be effective it is essential that both explicit and tacit knowledge are present in the organisation’s infrastructure.

2.2.3 Implicit knowledge

The concept of tacit knowledge is not accepted without discussion by the opposing sides in the KM debate. In fact, Wilson (2002) distinguishes tacit and implicit knowledge as

follows: “Implicit knowledge is expressible; tacit knowledge is not”. Thus, tacit knowledge can be translated into workplace heuristics and mnemonics that becomes implicit knowledge. That is, implicit knowledge is knowledge which is hidden within procedures, management and work practices of the organisation. It may include human experiences, informal representations, such as images and visions and formal inferences from explicit knowledge.

2.3 Definitions of Knowledge Management (KM)

KM and its various aspects have become the subject of much debate amongst philosophers and members of diverse fields (Nonaka and Takeuchi, 2000). There is still no one widely accepted definition for KM neither is it aligned to definite framework of any discipline. This has attributed to the plethora of definitions that abound in the literature as each author defined KM according to his or her own perspective (Egbu, 2004).

Davenport and Prusak (2000) maintain that KM is often used to describe the processes through which an organisation develops, organises, and shares knowledge to achieve its competitive advantage. KPMG Management Consulting (1999) understands KM “as the systematic and organised attempt to use knowledge within an organisation to improve its performance.

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. The primary aim of KM in any organisation is to tap knowledge from all members of the organisation and

manage it to enable all members to share and access the resource without complication. These definitions enable this thesis to conclude that KM basically involves the synthesis of diverse procedures, processes, technologies and fields of study needed to bring about a sustainable environment enabling knowledge to be celebrated and exploited to create value for the organisation. Thus, and in generic terms, the aim of KM practices is to maximize organisational and individual knowledge by extracting tacit or implicit knowledge and translating these into explicit knowledge, which then can be interpreted, represented, codified, stored, retrieved, shared and disseminated (Nunes *et al.*, 2005).

2.4 Knowledge Management Approaches

Organisations managed knowledge more or less intentionally. In recent years, a more intentional approach to organisational KM has piqued both scholars and industry practitioners' interests. There are numerous approaches on KM currently being adopted and used by organisations and each has its own strengths, weaknesses, benefits and potentials. The concepts are best defined according to how best organisations use them. There are two tracks of activities as follows:

1. IT tracks KM or technologies centred: The IT track of KM leverages on information and communication technology to unify organisation's knowledge assets. Today, there are several KM solutions that are being developed and installed to speed the KM practice. As referred by Velden (2002) this track is the first generation of KM focusing on the ICT capabilities in managing organisation practices.
2. People track KM or people centred: The people track KM focuses on the organisational behavioural approach. ICT is an enabler and acts as a platform for expediting KM practices.

Moreover, Sveiby (2002) agrees that there are two tracks of KM. The first track is the management of information approach. Researchers/practitioners in this cluster tend to have their education in computer or information science. They are involved in the development of information management systems, artificial intelligence, reengineering and group ware. This track is a new generation of KM and is growing very fast. On the other hand, the people track which is considered as an old track and not growing so fast, involves those who have their education based on philosophy, psychology, sociology and business/management.

Scarborough *et al.*, (1999) also proposed two basic approaches to KM, which is classified as 'supply driven' and 'demand driven'. Supply-driven initiatives identifies that the fundamental problem of KM is concerned with the flow of knowledge and information within the organisation. The aim is to increase that flow by capturing, codifying and transmitting knowledge. Supply-driven initiatives typically have strong technological presence. Demand-driven approaches are more concerned with users' perspective and their motivation and attitudes are seen as important.

Similarly, Hansen *et al.*, (1999) opined that, most of the proposed approaches to manage knowledge can broadly be categorised into codification and personalisation. Codification refers to the process of leveraging an explicit knowledge in databases so that knowledge can be shared and used by other people. It focuses on identifying, eliciting and storing knowledge in repositories, which makes that knowledge available for all. This strategy promises to support high-quality, reliable, and speedy reuse of knowledge. The downside is that it usually means separating the knowledge from its creators. The personalisation strategy emphasizes the process of leveraging tacit knowledge through direct personal contacts. Personalisation mechanisms are often thought of to be more ad hoc and

informal, and codifications are perceived as formal and involve the use of electronic databases.

2.5 Knowledge Management Enablers

A working environment with information technology or a culture that supports its employees' knowledge activities is called an organisational infrastructure. Enablers that are focused on building an infrastructure that supports KM are called KM enablers. In order to ensure the success of KM implementation, it is important to control key enablers in an organisation. This can therefore lead to efficient utilization of limited resources available, saving on human resources, material resources, time, and, ultimately, reaching the expected goal of KM. Ichijo et al. (1998) noted that if an organisation intends to avoid arbitrary or unsystematic knowledge development, then it should construct some enablers that can lead the organisation to a consistent and systematic development. These enablers form a mechanism that stimulate members to develop knowledge, break the obstacles of knowledge development, and encourage members to share their knowledge and experiences.

Previous researches that focused on the potential KM enablers (factors) are based on the following ten themes:

- I. Strategy and leadership (Yeh *et al.*, 2006; Ho, 2009).
- II. Formalisation (Lee and Choi, 2003).
- III. Decentralisation (Lee and Choi, 2003; Lee *et al.*, 2012).
- IV. Collaboration (Teerajetgul and Charoenngam, 2006; Teerajetgul *et al.*, 2009).
- V. Trust (Lee and Choi, 2003; Teerajetgul and Charoenngam, 2006; Teerajetgul *et al.*, 2009).

- VI. Learning (Skyrme and Amidon, 1997; Lee and Choi, 2003).
- VII. Incentive (Ma^ortensson, 2000; Teerajetgul and Charoenngam, 2006; Teerajetgul *et al.*, 2009; Ajmal *et al.*, 2010).
- VIII. Information technology (Lee and Choi, 2003; Wong, 2005; Teerajetgul and Charoenngam, 2006; Teerajetgul *et al.*, 2009).
- IX. Communication (Ma^ortensson, 2000; Al-Alawi *et al.*, 2007).
- X. Individual skills (Lee and Choi, 2003; Teerajetgul and Charoenngam, 2006; Teerajetgul *et al.*, 2009).

The ten identified themes of KM enablers listed above are credited majorly to the following authors;

Ho, (2009) explained that the prerequisite of KM is strategy, wherein the members of an organisation are ready to plan and give their contributions to KM. Zack (1999) suggests that the most important factor that promotes KM is organisational strategy. It is very important to understand organisational strategy and KM strategy. He concludes that knowledge strategy relates to organisational strategy. Zack suggests that this can be studied from these two dimensions: aggressive strategy and conservative strategy. In terms of long-term observation, the companies that employ a knowledge aggressive strategy show better performance than companies that employ a knowledge conservative strategy. Companies that show a weak performance in the market should adopt a knowledge aggressive strategy in order to create new competitive advantages. After understanding the important correlation between KM and strategy, another critical component that we should pay attention to is leadership. Some scholars deem that the implementation of a KM project is a kind of reformation. Therefore, the supports provided

by senior managers determine the success of these KM projects. Greengard (1998) advises senior managers to give their support after understanding the value of KM, and play the role of aggressive decision makers. In addition, Davenport et al. (1998) conclude that among the critical factors that determined the success of KM projects from 31 KM cases, one of the most important enablers was the support given by the senior managers.

In Lee and Choi, (2003) research, they made it known that among the prominent KM enablers are organisational culture, structure, people, and IT. Organisational culture is the most important factor for successful knowledge management (Chase, 1997; Davenport *et al.*, 1998; Demarest, 1997; Gold *et al.*, 2001). Culture defines not only what knowledge is valued, but also what knowledge must be kept inside the organisation for sustained innovative advantage (Long, 1997). Organisations should establish an appropriate culture that encourages people to create and share knowledge within an organisation (Holsapple and Joshi, 2001). There is a focus on collaboration, trust, and learning on the basis of the concept of care (Eppler and Sukowski, 2001). Care is a key enabler for organisational relationships (Krogh, 1998). When organisational relationships are fostered through care, knowledge can be created and shared. The organisational structure within an organisation may encourage or inhibit knowledge management (Gold *et al.*, 2001; Hedlund, 1994; Nonaka and Takeuchi, 1995). For example, Ichijo et al. (1998) insisted that firms should maintain consistency between their structures to put their knowledge to use. Past study included two key structural factors such as centralisation and formalisation (Menon and Varadarajan, 1992). They are recognised as key variables underlying the structural construct. Moreover, their effects on knowledge management within organisations are widely recognised to be potent (Eppler and Sukowski, 2001; Jarvenpaa and Staples, 2000; Lubit, 2001; Riggins and Rhee, 1999). People are at the heart of creating organisational knowledge (Chase, 1997; Holsapple and Joshi, 2001; Ndlela and Toit, 2001). It is people

who create and share knowledge. Therefore, managing people who are willing to create and share knowledge is important (O'Dell and Grayson, 1999). Knowledge and competence can be acquired by admitting new people with desirable skills (Stonehouse and Pemberton, 1999). In particular, T-shaped skills embodied in employees are most often associated with core capability (Iansiti, 1993; Johannessen *et al.*, 1999; Leonard – Barton, 1995). T-shaped skills may enable individual specialists to have synergistic conversations with one another (Madhavan and Grover, 1998). Technology contributes to knowledge management (Gold *et al.*, 2001). This technology infrastructure includes IT and its capabilities (Raven and Prasser, 1996; Scott, 1998). IT is widely employed to connect people with reusable codified knowledge, and it facilitates conversations to create new knowledge. Among technology-related variables, experts have focused on IT support (Stonehouse and Pemberton, 1999). ITs allow an organisation to create, share, store, and use knowledge (Leonard – Barton, 1995). Therefore, the support of IT is essential for initiating and carrying out knowledge management. Enablers may be structured based upon a socio-technical theory (Pan and Scarbrough, 1998). This theory describes an organization from the social and technical perspectives. The two perspectives are not unique to knowledge management research (Bostrom and Heinen, 1977); they are made up of two jointly independent but correlative interacting components. Organisational culture, organisational structure and people are social enabler - a technical enabler.

According to Teerajetgul and Charoenngam, (2006), construction managers are seen to place emphasis on individual competency or tacit knowledge. Their flexible thoughts and engineering techniques were elements of tacit knowledge which is fundamental to fostering knowledge management and creativity. They further asserted that the strength of knowledge management rests on the vision and aspiration of construction managers in applying creativity in on-site knowledge practices. Also, by having appropriate and

attractive incentives, competent project teams can easily be engaged to utilise and generate new knowledge in the form of problem solving. In addition, in order to make knowledge visible, the competency in using IT to convert conceptual ideas and package knowledge into obvious activities must be inherent. IT is seen to facilitate the knowledge creation process by capturing knowledge in real time and thereafter, making it accessible for future use. IT greatly benefits construction projects in that it speeds up the project team's decision making process and thus shortens the product life cycle.

2.6 Knowledge and Consultancy Firms

According to Carr-Saunders (1966) a profession may perhaps be defined as an occupation based upon specialised intellectual study and training, the purpose of which is to supply a skilled service or advice to others for a definite fee or salary. Similarly, consultancy firms are knowledge-intensive organisations that provide expert advice and professional knowledge to clients (Løwendahl, 2000). He further opines that the organisational assets reside in the experience and knowledge of staff, rather than in plant and equipment.

2.6.1 The Essential Characteristics of Consultancy Firms

According to Fong and Choi, (2009), there are four essential characteristics of firms rendering consultancy services to clients in their professional capacity, which are as follows:

1. Knowledge-intensive nature.
2. Advisory nature.
3. Competence governed by institutions.
4. Code of conduct.

2.6.1.1 Knowledge-intensive nature

A higher educational qualification is an element of professions (Løwendahl, 2000; Blau and Scott, 1962; Hughes, 1958). This is reflected in the common belief in the industry that a body of knowledge originates from academic study and practical training in professional services firms. Consultants' skills and expertise are thus the talent of their firms and also contribute highly to firms' reputations. As a result, practitioners in these firms are associated with impressive academic backgrounds, supported by either accreditation of professional status from professional institutes or academic achievement in recognised academic institutions.

2.6.1.2 Advisory nature

It is claimed that altruistic and specialised services to clients are the core services of professionals (Løwendahl, 2000). Consultancy firms are mostly private practices that seek to offer professional service to clients in construction projects. The scope of their services is stretching beyond the traditional framework to suit clients' ever-increasing demands. In contrast to these firms there are basic service and also additional service (Abdullah and Haron, 2006). These firms have to shape their service to adapt to different clients and business scenarios. Hence, the quality of situation-specific decisions is a useful indicator to reflect the competence of a professional organisation. To discharge their professional duties, they have to apply their knowledge and expertise to provide impartial and objective advice and analyses to clients. The quality of their decision depends to a large extent on the appropriate exercise of their expert discretion and professional judgment in relation to design risks, cost control and contract administration for construction projects. As a result, with clients' needs well communicated between clients' representatives and consultants in advance, clients generally receive an excellent professional service (Fong and Choi, 2009).

2.6.1.3 Competence governed by institutions

It is essential for a professional service that a governing professional body is established to maintain the competence and control the standards of conduct of the profession (Bennion, 1969). Therefore, the title of chartered member is taken as recognition of professional competence. The competence of professionally qualified consultant in Nigeria is well established and regulated by the professional institution, i.e. the Nigerian Institute of Quantity Surveyors (NIQS), Nigerian Institute of Architects (NIA), Nigerian Society of Engineers (NSE) and so on. Although many practitioners claim to be QS, Architect or Engineer, the title of chartered professional is only awarded to those who have passed the professional competence test set by the appropriate institutions. Clients therefore, have some assurance of the standard of the intangible service they are purchasing under this system.

2.6.1.4 Code of professional conduct

Consultants are often involved in managing confidential information, such as tender sums submitted by contractors in construction projects and payments to contractors for work done on site. They have to be fully aware of, and abide by, provisions in the standards of conduct and professional ethics. An instance emphasizing this is the QS Act 1967 (Quantity Surveyors amendment Rule, 2004), highlighted that only registered QS are permitted to practice quantity surveying services. Similarly, the qualification of practitioners in consultancy firms is well controlled and recorded under the registers of the institution.

These firms offer a wide range of services to their clients. The heavy reliance on the expertise and knowledge of staff sets a standard for outsiders to imitate. Freidson (1994) described these kinds of professional services as esoteric from the perspective of KM, the management of consultancy firm is a very exciting one. They are firms in an industry

whose core product is knowledge itself. Managing knowledge is the most critical process in the consulting industry (Sarvary, 1999). They sell their expertise and experience to customers. The experience and expertise are nothing more than knowledge. Consultancy firms get paid for the knowledge that they are providing to the clients. Producing and selling knowledge constitute their core activities.

2.7 Reasons for using KM to enhance Consultancy Firm's Performance

In order to subsist and grow in the future, professionals in the built environment has the utmost necessity to respond to the accelerating social, technological, economic and environmental changes quickly as well as productively (RICS, 1992). Future professionals are required to have a thorough knowledge and understanding of the client's operating environment, their strategic dilemmas and aspirations, their values and their knowledge base the client is attempting to foster (Pathirage and Amaratunga, 2006). Furthermore, managing knowledge more effectively offers construction consultancy firms a possible mechanism for improving their performance in times of greater competition (Carrillo *et al.*, 2004).

However, most Knowledge based firms face a problem in that they are losing knowledge due to the retirement or resignation of key personnel (Sarvary, 1999). He further, asserts that losing knowledge may have impacts that are very tangible and financially quantifiable, or impacts can be intangible and hard to measure. With the help of a KM system, knowledge is shared and stored and thus the risk of losing the knowledge can be minimised.

2.8 Benefits of Knowledge Management to Consultancy Firms

KM has been empirically proven to help the improvement of performance in the manufacturing industries in terms of the quality, time, speed and reliability while reducing

production costs (Davenport *et al.*, 1997). The potential benefits of KM have been supported by a number of researchers, as a key capability which can generate sustainable competitive advantage (Davenport *et al.*, 1997; McCampbell *et al.*, 1999; Soliman and Spooner, 2000). A literature review revealed that the potential benefits of the KM implementation are:

- a. Improved decision-making
- b. Improved efficiency of people and operations
- c. Improved innovation
- d. Increased flexibility to adapt and change
- e. Reducing process cycle times
- f. Reduce time to market
- g. Sharing best practice
- h. Improved management learning

Due to this success, many calls were made by the construction industry's leaders and academics for the adoption of KM in construction industry (Mohd Zin *et al.*, 2007). The implementation of KM strategy can lead to the accrument of many benefits to organisations. Therefore, construction industry should take advantage to all the benefits of KM initiatives. Some of the key benefits of KM to construction sector and consultancy organisations were also highlighted by Robinson *et al.*, (2001); Egbu (2004); Al-Ghassani *et al.*, (2004); Carrillo *et al.*, (2004) and Anumba *et al.*, (2005). Among the benefits are;

- i. Innovation
- ii. Improved performance
- iii. Improved construction method
- iv. Project delivery
- v. Facilitate the transfer of knowledge across a variety of project interface
- vi. Increased intellectual capital
- vii. Better placed to respond quickly to clients' needs and other external factors
- viii. Improved support for teams of knowledge workers
- ix. Retain the valuable tacit knowledge
- x. Increased value of the project
- xi. To respond to organisational changes
- xii. Risk minimisation
- xiii. Reduce rework

Moreover, impressive benefits of KM from O'Dell and Grayson (1998) and McCampbell *et al.*, (1999) point of view involved money saved or earned. According to Clark and Soliman (1999), many benefits of KM are intangible and difficult to quantify. Since traditional financial measure such as return on asset or return on equity cannot sufficiently evaluate the intangible aspects of organisational assets, such as knowledge or knowledge workers. The ability of an organisation to manage their knowledge is one of the key factors to keep abreast with global market competition. To move forward and become more resilient of outside pressures, construction industry players have to admit that they

have to work collectively and come up with strategies that could cultivate sustainable business performance culture in construction and construction related organisations (Moh'd Zin *et al.*, 2007). However, a study by Robinson *et al.*, (2001) found that for construction and consultancy organisations, the most important reasons for commencing KM were; dissemination of best practices to key sets of employees, retention of the tacit knowledge of key employees, continuous improvement, the need for quick customer response and the need to share knowledge. Hence adopting KM strategies in construction and construction related organisations will help to identify, capture and disseminate knowledge of employees and customers and subsequently enhancing performance.

One of the initiatives that are worth considering is to ensure that their organisations adopt KM strategies in all aspects of the organisation. There is also an increasing awareness that to survive and maintain sustained competitive advantage in an uncertain and global marketplace, organisations need to give due consideration to strategies that lead to effective KM initiatives and outcomes (Egbu *et al.*, 1999). Effective KM offers consultancy firms a possible mechanism for improving their performance to be ahead of tougher competitors, and its role as a tool of competitive advantage for construction and construction consultancy organisation has been highlighted by several authors for example Kululanga *et al.*, (1999); Egbu *et al.*, (1999); Carrillo *et al.*, (2000).

2.9 Performance

Kwaku (2007) defined 'performance' as the behavioral action that is relevant in achieving goals of project-based organisations. Similarly, Idrus and Sodangi (2010) asserted that 'performance' can take on different meanings depending on the context in which it is being used. They further defined 'performance' in their view as basically the measures of effectiveness and efficiency. Performance is the degree to which individuals or firms/organisations operate according to specific criteria/standards/guidelines or achieve

results in accordance with outlined goals or plans. (Source: A guide for project M & E: Glossary of M & E concepts and terms). Olusola and Iyagba (2012) stated that issue of 'performance' has been challenging occurrence in the construction process for quite some time. Based on what is in existence in literature, it can be deduced that 'performance' encompass the action performed which is on quantifiable basis. Or 'performance' entails the quantification of action based on some criteria or yardsticks.

2.10 Performance Measurement

Neeley *et al.*, (1994) defined 'performance measurement' as the set of metrics used to quantify both efficiency and effectiveness of actions. Kingsley (2010) also referred to performance measurement as the regular measurement of the results and efficiency of services of program. He further stated that the review of 'performance measurement' in construction industry generally reaffirmed the need to have an objective technique (holistic approach) rather than subjective technique (financial measures only) of measuring construction project performance. Takim *et al.* (2003) also defined performance measurement as the regular collection and reporting of information about inputs, efficiency and effectiveness of construction firms and projects. Based on the foregoing, it can be seen that day to day decision that are usually taken concerning the efficiency and effectiveness of inputs applied is vital components of any effort for results. Neeley *et al.*, (1994) asserted that performance measurement provides necessary information for process control which makes it possible to establish challenging and feasible goals. Therefore, the development of a set measurable criteria is key to any performance measurement system. That will enable the ascertainment of whether a particular goal is achieved or not.

2.11 Performance Measures/Indicators

Previous studies have classified the performance measurable yardstick into measures and indicators. Mbugau *et al.*, (1999) stated that performance indicators specify the measurable evidence necessary to prove that a planned effort has achieved the desired result. Furthermore, when indicators can be measured with some degree of precision and without ambiguity are referred as measures. This is to say, when it is not possible to obtain a precise and accurate measurement that is usually referred as performance indicators. While “criteria” can be referred to as the judgment on accomplishment of some certain tasks. On the opposite, performance measures are the numerical or quantitative indicators (Sinclair and Zairi, 1995). Furthermore, Mbugua *et al.* (1999) stated that performance measurement is the systematic way of evaluating the inputs and output in manufacturing operations or construction activity and acts as a tool for continuous improvement. Thus, the quantification of performance can only be achieved through some performance measures and indicators. Those performance measures/indicators that determine performance in a precise or on quantifiable manner in construction industry includes financial stability, sustained profits, improvement of employee’s professional skills, employee retention, retaining current clients, increasing new clients, increasing market share and increasing reputation in the construction market (Dang *et al.*, 2019).

2.12 Importance of Performance Measurement

Osborne and Gaebler (2005) stated that failure to measure result means that a distinction cannot be made between success and failure, and if success is not appreciated, it cannot be rewarded, then, probably failure is being rewarded and the ability to recognise failure means it cannot be corrected. But if the results can be demonstrated or described the improvement can be actualised. Similarly, Kingsley (2010) stated that organisational performance measurement criteria can provide the industry with an objective assessment

of performance with strength and weakness pointed out and performance measurement can provide a yardstick in which construction industry stakeholders can use to improve the quality of work, cost effectiveness and efficiency of operations which will in turn improve general performance.

2.13 Relationship Between Knowledge Management Organisational Performance

The potential for KM to create competitive advantage is positively linked to organisational performance (Schulz and Jobe, 2001). Treacy and Wiersema (1995) proposed three “value disciplines” or strategic performance capabilities, each offering a path towards competitive advantage. Organisations often implement KM practices to improve one or more of these three value disciplines (O’Dell *et al.*, 2003). Likewise, relevant theories of the firm are available to explain the utility of knowledge management within the organisation. The two most prominent theories of a firm are identifiable to predict and to explain the possible positive linkage between knowledge management strategy and firm performance, namely; the resource-based view and specifically knowledge-based view (Tzortzaki and Mihiotis 2014). The resource-based view purports that consultancy firms capable of effectively managing the rare and valuable asset of knowledge may gain a sustained competitive advantage (Barney 1991; Kor and Mahoney 2004; Peteraf 1993; Wernerfelt 1995). In a similar fashion, the knowledge-based view asserts that knowledge is a primary asset for consultancy firms to survive and to prosper (Grant 1996, 1997; Sveiby 2002). It is argued that KM capability is reflected by a strong foundation of enablers. Hence, KM enablers is positively associated with consultancy firms’ performance. For these firms, the benefits of having high proficiency in the management of knowledge are understandable. As elaborated earlier, project-based firms such as consultancy firms encounter specific challenges, including the temporary nature of the team organisation as well as its unique (non-repetitive) process and outputs of the

project. The temporary organisation of projects results in difficulty retaining project experts and their expertise for the benefit of these firms. The unique project attributes result in a condition in which experience is difficult to learn; accordingly, it could be easily forgotten by the organisation. A highly competent KM in the consulting firm could overcome such challenges, and the ability could be translated into superior performance.

The identified Knowledge Management enabling factors (KMEFs) were later investigated in relation to the extent of their practice and the impact it has on performance.

The overall research theoretical model is shown in fig. 2.1.2 below;

Knowledge Management Enabling Factors (Source: Dang *et al.* (2019)).

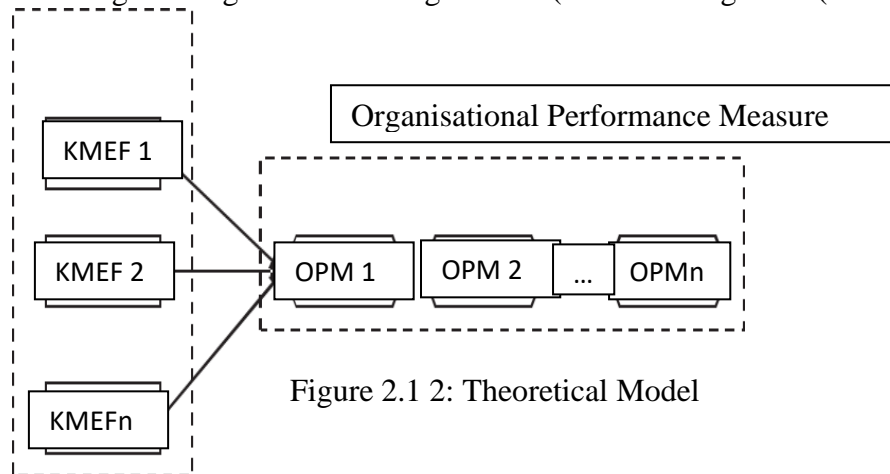


Figure 2.1 2: Theoretical Model

2.14 Review of Knowledge Management Studies in Construction Industry

In today's construction environment, knowledge management is progressively becoming a crucial issue in business strategies of various organisations to achieve competitive advantages (Ahmad et al. 2008). Knowledge management theories are increasingly applied to instruct managerial practices of many organisations at different levels (e.g. team, project and firm levels) (Yu and Yang 2016). Several studies have focused on knowledge sharing in construction teams. Specifically, mechanisms of knowledge sharing, which revealed the relationships of knowledge sharing characteristics (e.g. intention, attitude and behavior) were studied by Zhang and Ng (2012a, 2012b, 2013). In

addition, many research endeavors have identified various objectives of knowledge management in construction projects. Because knowledge of prior projects was useful for developing management-related strategies in later projects (Yu and Yang 2016), live capture and reuse of project knowledge were necessary (Tan et al. 2006). Some integrative models of knowledge management were developed (e.g. Kanapeckiene et al. 2010; Ruan et al. 2012). Several key factors were identified to improve knowledge creation (Teerajetgul and Charoenngam 2006) and knowledge management implementation (Teerajetgul et al. 2009) in construction projects. Some applications of knowledge management focused on project risk (Tah and Carr 2001), project change (Senaratne and Sexton 2008) and project complexity (Cooke 2013). Several research works focused on knowledge capture (Kivrak et al. 2014), knowledge sharing (Kivrak et al. 2014), knowledge transfer (Ekambaram et al. 2010), knowledge utilization (Teerajetgul and Chareonngam 2006; Al ashwal et al. 2016) and knowledge mapping (Yun et al. 2011) in construction projects.

Furthermore, many other studies have attempted to understand knowledge management in a number of organisations in the construction industry. Management of knowledge assets (Robinson et al. 2005), management ways of knowledge and expertise (Ribeiro 2009) and strategic importance of tacit knowledge management activities (Chen and Mohamed 2008) were investigated in different types of organisations. In support of organisational memory, Irani et al. (2009) attempted to map knowledge management as well as organisational learning. A number of research works focused on knowledge management initiatives (Carrillo and Chinowsky, 2006), knowledge management strategies (Esmi and Ennals 2009), knowledge management success (Fong and Kwok 2009), knowledge management implementation (Tan et al. 2012), success factors of knowledge management implementation (Khalifa and Jamaluddin 2012), interactions

between knowledge management activities (Chen and Mohamed 2008), influential factors (Chen and Mohamed 2008) or generations (Rezgui et al. 2010) of knowledge management, evaluation of knowledge management practices (Kale and Karaman 2011; Kale and Karaman 2012) and knowledge management perceptions (Forcada et al. 2013) in various organisations. Several research attempts focused on knowledge sharing in various types of organisations (e.g. Fong and Chu 2006; Javernick-Will 2012). On the aspect of KM enablers, attempts have been made on the stand alone and inclusive effect it has on organisational performance in a number of industries (Payal *et al.*, 2019; Al-Sohaim et al.; 2016, Lee and Choi, 2014). It could be seen that various research issues of knowledge management have been investigated at different levels of organisations in construction industry with a dearth of knowledge on the influence KM enablers has organisational performance of construction consultancy firms.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

According to Viljoen (2010), a research design can be defined as the logical sequence that connects the empirical data to a study's initial research question and ultimately, to its conclusions. The quantitative research method has been adopted for this research because it lays emphasis on facts, shows the relationships that exists between facts and how such facts agree with already established facts (Cheung, 2011b). Therefore, given the theme of the research being undertaken, that is; "the influence of KM enablers on performance of consultancy firms", this approach is the most appropriate. Quantitative approach (sometimes referred to as scientific approach) was originally developed in the natural sciences to study natural phenomena. The approach uses empirical approaches including survey methods, laboratory experiments, formal methods (e.g. econometrics) and numerical methods such as mathematical and computer modeling. Quantitative research is 'objective' in nature, it is an inquiry into a social or human problem, based on testing a hypothesis or a theory composed of variables, measured with numbers and analysed with statistical procedures, in order to determine whether the hypothesis or theory holds true, thereby proffering a means to answer research questions . The approach relies on the objectivists' view of the social world and generally involves the collection and analysis of data using statistical procedures and analysis. Furthermore, surveys are quantifiable and therefore are not only indicators in themselves, but also allow the application of more sophisticated analysis techniques appropriate to organisations (Xenos & Christodoulakis, 1997).

This research was conducted by examination of relevant literature followed by a field survey. The first stage consisted of reviewing relevant literature to identify KMEFs and various organisational performance measures.

3.2 Population of The Study

The population is the entire group whose characteristics are to be estimated (Wimmer *et al.*,2011). A population can be defined as the universe represented in a group of interest on which the researcher wishes to draw information and generalise result of a study. Also, Verma & Beard (1981) describe population as a large group from which a sample is selected for study. For the purpose of this study, a list of registered construction firms rendering consultancy services such as Quantity Surveying, Architectural, Building Services Engineering and Structural/Civil Engineering firms was, obtained from their various regulatory bodies to reveal the number of registered consultancy firms across the country constituting the target population. Thus, the population summed up to 2,126 firms with Architectural firms having 1,143, Quantity surveying having 391, Engineering firms 513 and Building firms represented by 79 firms.

3.3 Sample Size

As it is often not possible to survey an entire population for practical and cost reasons, a subsector sample of the population is usually considered (Ibrahim, 2013). The term sample means a specimen or part of a whole (population) which is drawn to show what the rest is like. Therefore, in order to determine a suitable size for the sample, Krejcie and Morgan (1970) formula as shown below was applied with the total population falling within 322 firms as sample size.

$$s = \frac{X^2 NP(1 - P)}{d^2(N - 1) + X^2P(1 - P)}$$

Where:

S = Required sample size

X^2 = The table value of chi – square for 1 degree of freedom at the desired confidence level (3.841)

N = The population size

P = The population proportion (assumed to be .50 since this would provide the maximum sample size)

d = The degree of accuracy expressed as a proportion (.05)

3.4 Sampling Technique

Sampling technique is a process that enables one to select elements within the said population (Morenikeji, 2006; Haque, 2013). According to Morenikeji(2006), except during census, total coverage of the population for research purposes is not only difficult and expensive but also unnecessary. The objective of sampling is to provide a practical means of enabling the data collection and processing components of research to be carried out whilst ensuring that the sample provide a good representation of the population (Jonker & Pennink, 2010). For this study, the unit of analysis is the firm, it is assumed that each firm irrespective of its location across the country renders consultancy services in accordance with the code of conduct of her profession. To this end, stratified random sampling technique was used to select the consulting firms that were issued the structured questionnaires. The stratified random sampling method is a statistical method in which the total population is divided into homogenous subgroups (strata) to complete the sampling process. Each stratum is formed based on shared attributes or characteristics, in this case being the respondent's various disciplines. In stratified random sampling

procedure, a final sample that is exhaustive (each participant of the population must belong to one stratum) and mutually exclusive (where participants don't overlap with another stratum) is provided. The main advantage of using stratified random sampling is that the method is fair for participants as the sample from each stratum can be randomly selected, meaning there is no bias in the process. It allows the researcher to account for bias in the strata contained in the population.

3.5 Data Collection

In order to obtain a reasonably high response for a questionnaire survey, self-administration of the questionnaires or postal survey was recommended (Fellows and Liu, 1997). Both methods for the administration of questionnaires are effective provided the addresses of the respondents are available and accessible to the researcher. The two methods survey was adopted for this study. This approach, despite being more expensive and more tedious than choosing either of the two approaches, has been found to be useful because of its far-reaching capability of obtaining more responses. Fellows and Liu (1997) suggested that questionnaires could be designed in two ways- open or closed. Open questions are easy to ask but difficult to answer and difficult to analyse. On the other hand, closed questions have a set of options as determined by the researcher's assessment of current literature. Fellows and Liu (1997) cautioned that the structured formation of available responses in a closed questionnaire may constrain the responses. Thus, the opportunity was provided to the respondents to express other views they felt were important to the study but not covered by the questionnaire. This was done by inserting a response opportunity of "other (please specify)" where necessary within the questionnaire.

The primary data was obtained through field survey, using a structured questionnaire designed into three sections (Sections A, B and C). Section A was used to obtain

information regarding the details of the organisations. The information required here includes;

- a. Name of firm. This sought to identify the name of the responding firm. However, to ensure confidentiality, this subsection was made optional.
- b. Years of existence of the firm. This information was needed so as to sieve away those firms with less than five years existence because only firms that have been in existence for a while could have answer to KM enablers is being practiced in their firms and what their performance has been like.
- c. Structure of firm.
- d. Nature of service rendered by the firm. This is to obtain the categorization of respondents based on their area of expertise as the industry is comprised of professionals such as Architects, Quantity surveyors, Engineers etc.
- e. Number of employees in the firm. This is seen useful in establishing the appropriate size of the firms being investigated.

The section B of the questionnaire was designed to obtain information on the practice of Knowledge Enablers in consultancy firms. The research adopts Dang *et al.*, (2018) themes of Knowledge Enabling Factors that exists in organisations amongst other several classification or categorization of KM enablers developed over time because of its validity and reliability as asserted by previous researches. Tables were provided with the construct of KEFs having thirty-one indicators to be assessed by the respondents on a five point Likert scale, where 1 =strongly disagree, 2 = disagree, 3 = somewhat agree, 4 = agree and 5 = strongly agree. The Likert scale is chosen for ease and uniformity of

response. Likert scale also provides a more versatile and user-friendly means to investigate individual perceptions using large samples (Sarros *et al.*, 2005).

Finally, section C was made up of questions aimed at discovering the extent to which these organisations have performed over the years and in relation with their competitors with organisational performance construct having eight indicators to be ranked by respondent using the same scale where 1 is strongly disagree and 5 is strongly agree.

3.6 Data Analysis Technique

The data collected for this study was analysed using descriptive and inferential statistics to answer the study objectives. Both analyses were performed using statistical package for social sciences SPSS software version 23.0. Frequency/percentage table were used to analyse the organisation's background information while arithmetic mean was used as measure for central tendency. The mean item score was employed in determining the extent of practice of KMEFs in consultancy firms and assess their organisational performance aspect.

To identify KMEFs which could significantly affect each and all organisational performance measures, stepwise multivariate regression analysis was performed to explore the influence of KMEFs (i.e. independent variables) on each organisational performance measures (i.e. dependent variable). The strength of association between KMEFs and organisational performance measures was assessed through the coefficients of determination (i.e. R^2 and adjusted R^2), which measures the goodness of fit of regression models (Saunders *et al.* 2007; Montgomery *et al.* 2012). Furthermore, the relationship between the two constructs (i.e KMEFs and organisational performance measures) was proven to be statistically significant using analysis of variance by obtaining the P – value of variables ran also with the help of SPSS.

3.7 Validation and Generalisation

Reliability and construct validity tests were conducted to determine the appropriateness of the survey instrument used in the study. Cronbach's alpha (α) model, which measures the internal consistency was used for the reliability analysis. Cronbach's alpha (α) is a widely used metrics for reliability evaluation (Hair, 2006). A questionnaire with an α figure of 0.7 is generally considered reliable and the result obtained from the analyses/test carried out revealed a value of 0.861 as shown in the table below which is above the reliable benchmark.

Table 1: Cronbach's Alpha Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.842	.861	39

Source: SPSS Analysis of survey data (2021).

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS & DISCUSSIONS OF RESULTS

4.1 Response Rate

In the survey, a total of 322 questionnaires were distributed to consultancy firms, of the 322 questionnaires administered, 121 were returned duly completed and all were used in the analysis as depicted in Table 4.1 which amounted to 37.5% response rate of the field survey. However, going by Moser and Kalton (1971) assertion, if a response rate from a survey is not lower than 30-40%, the results could be considered significant and accepted as valid, based on this, the percentage of the returned questionnaires is adequate for the analysis.

Table 2: Questionnaire Response Rate

Questionnaires	Frequency	Percentage
Returned	121	37.58
Not-Returned	201	62.42
Total	322	100

Source: (Field Survey, 2021).

4.2 How research objectives were achieved

The table below is a depiction of how the four research objectives laid out earlier were achieved.

Table 3: Achieving Research Objectives

S/N	OBJECTIVE	HOW IT WAS ACHIEVED
1.	To identify KM enabling factors and organisational performance measures in construction industry	Through the review of existing literature. (31 KM enabling factors and 8 Performance Measures).
2.	To assess the practice of KM enabling factors in construction consultancy firms.	Through means score analysis and ranking.
3.	To assess the various organisational performance measures in construction consultancy firms.	Through multiple regression analysis.

4.	To assess the influence of KM enabling factors on organisational performance measures.	Through multiple regression analysis.
----	--	---------------------------------------

4.3 The Profile of Firms Involved in the Study

Table 4: Profile of firms

Description	Frequency	Percent (%)
Type of service rendered:		
Architecture	21	17.40
Building	12	9.90
quantity surveying	49	40.50
structural engineering	19	15.70
building services engineering	20	16.50
Total	121	100
Years of existence of firms:		
0-5 years	37	30.60
6-10 years	43	35.50
11-15 years	39	32.20
above 20 years	2	1.70
Total	121	100
Structure of the firm:		
sole proprietorship	39	32.20
Partnership	82	67.80
Consortium	0	0
Total	121	100

Sizes of the firms:

less than 10 employees	41	33.90
11 – 50 employees	52	43.00
51 - 100 employees	28	23.10
Total	121	100

Source: Field Survey, (2021).

The profile of the firms involved in this study were displayed on Table 3. The table revealed that firms that have been in operation between 0 to 5 years were 37 (30.60%) while 43 firms (35.50%) have been in operation for about 6 to 10 years. Those who have been in operation for about 11 to 15 years and above 20years were 39 and 2 firms (32.20% and 1.70%) respectively of the total numbers involved in the study. This is considered good for this research because according to Anas (2016) firms with such years of establishment distributed across the two extreme end of least and more years of experience would depict true picture of performance as time progresses.

Likewise, the table shows that 49 Quantity surveying practice firms representing 40.5% of the firms surveyed are the highest followed by Architectural services firms with 21 (17.40%) firms. About 16.50% amounting to 20 Building services engineering firms were represented in the study while the last two professions which are Structural engineering and Building firms occupied 15.70% (19 firms) and 9.90% (12 firms) respectively forming the participants of the survey.

The table further revealed the categorisation of business ownership of how the firms are structured, it shows that 39 (32.20%) of the firms were operated as sole proprietorship business. Those operated as Partnership were 82 (67.80%) and none were operated as a consortium, the classification therefore implies that most of the firms were operated as partnership in the study area. It is not surprising why majority of the firms are operated

as a partnership because according to Ogbu (2015), competition in the Nigerian construction market is exponentially increasing as client expectations are becoming more complex, the economy and technological environments are facing turbulent times and there is increased population of professionals. Hence, in order to keep afloat, ownership of these firms rendering consultancy services are almost in partnership forms instead of being alone to have better chances of survival.

The table lastly revealed classification of firms based on their sizes, the categorisation was based in accordance to National Bureau of Statistics (2007) classification; Small (below 10 employees), Medium (between 11 and 50 employees), Big (between 51 and 100 employees) and Large (Above 100 employees), it shows that more than 30% of the firms (41 or 33.90%) have between 1 and 10 employees while 52 (43.00%) of the firms have between 11 and 50 employees. Only 28 (23.10%) of the firms has between 51 to 100 employees, this distribution reflects that insufficient funds among other factors could be the reason most consultancy firms keep small and medium firm sizes and are regarded as small medium enterprises (SMEs). This observation is similar to Yankah (2015) who equally observed most consultancy firms survey carried out in Ghana are small firms (that is having less than 10 employees).

4.4 Extent of Practice of Knowledge Management Enabling Factors (KMEFs) In Consultancy Firms

This relate to the second objective of the study which seek to evaluate the extent to which KMEFs are practiced in firms rendering consultancy services as the first objective of identifying these factors and various organisational performance aspects has been achieved through the review of literature. Going by Fadeke *et al.*, (2015), for a Likert scale measurement of level agreement among respondents, a threshold can be set at point 3 (somewhat agree/neutral) which is adopted for this study. The midpoint is a useful

means of determining what might otherwise be a more or less random choice between agreement and disagreement (Olubunmi, 2013). Thereafter, ranking was done based on the mean values of measures of central tendency of statistics. According to Alarape and Agbaje (2010) ranking is a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or 'ranked equal to' the second. In statistics, "ranking" refers to the data transformation in which numerical or ordinal values are replaced by their rank when the data are sorted. By reducing detailed measures to a sequence of ordinal numbers, rankings make it possible to evaluate complex information according to certain criteria.

The table presented below shows that “encouraging interaction with experts” was ranked highest with a means score of 4.80, followed by “encouraging employees to be creative and innovative at work” and “maintaining compliance with formal regulations or plans while initiating contacts and communication” ranked second and third with mean scores of 4.66 and 4.47 respectively and the least ranked factor being “allowing employees to take action without supervisor” with a mean score of 2.39.

Table 5: Knowledge Management Enabling Factors (KMEFs) Practice in Consultancy firms

Source: Field survey, (2021).

S/N	Knowledge Management Enabling Factors	Mean	Std. Dev.	Rank
1.	Encourages interactions with experts	4.80	.40	1
2.	Encourages employees to be creative and innovative at work	4.66	.48	2
3.	Maintains compliance with formal regulations or plans while initiating contacts and communication	4.47	.52	3
4.	Promotes strategic collaborations to acquire knowledge	4.42	.63	4
5.	Follows written regulations and procedure	4.42	.87	5
6.	Lay emphasis on the use of information technology system to share experience and knowledge about work	4.36	.65	6

S/N	Knowledge Management Enabling Factors Cont'd	Mean	Std. Dev	Rank
7.	Lay emphasis on the use of information technology system for management activities	4.36	.63	7
8.	Promotes effective use of internal communication channels	4.33	.47	8
8.	Promotes effective use of internal communication channels	4.33	.47	8
9.	Reward good achievements of professional activities	4.32	.55	9
10.	Encourage completion of activities with issued regulations and procedures	4.23	.57	10
11.	Facilitates experiential learning to gain knowledge	4.22	.61	11
12.	Lay emphasis on staff supporting and helping each other	4.18	.39	12
13.	Facilitates attendance of employees in workshops and symposia	4.17	.95	13
14.	Promotes employees' good ability of communication	4.17	.39	14
15.	Promotes employees' fast adaptation to changes of working environment	4.14	.37	15
16.	Organises job skills training courses or formal training programs	4.12	.70	16
17.	Creates opportunities for informal individual development or self-learning	4.08	.48	17
18.	Has a culture to promote knowledge sharing	4.03	.41	18
19.	Incentivizes its employees monetary wise	4.02	.72	19
20.	Advocates having trust in colleagues' ability	3.98	.55	20
21.	Advocates having trust in colleagues' behaviors to work toward organisational goals	3.97	.34	21
22.	Advocates having trust in colleagues' decisions toward organisational interests	3.93	.38	22
23.	Incentivizes its employee with non – monetary trait (promotion opportunities)	3.91	.37	23
24.	Satisfied with employees with good professional competencies	3.88	.84	24
25.	Encourages the effective use of external communication channels	3.80	.42	25
26.	Engages in regular evaluation of employee expertise	3.73	.70	26
27.	Has a high predisposition to collaborate	3.71	.61	27
28.	Relinquishes the responsibility of coordination to employees most times	3.10	1.02	28

S/N	Knowledge Management Enabling Factors Cont'd	Mean	Std. Dev	Rank
29.	Accepts instantaneous and independent decision making	2.97	.85	29
30.	Encourage employees to make their own decisions	2.86	1.04	30
31.	Allow employees to take action without supervisor	2.39	.98	31

Source: Field survey, (2021).

4.5 Assessing the various Organisational Performance Measures in Consultancy Firms

This relate to the third objective of the study which seek to assess the most sought after performance measure with regards to what has been recorded in the past and in comparison with competitors in firms rendering consultancy services as the first objective of identifying these measures and various Knowledge Enabling Factors (KEFs) has been achieved through the review of literature. With the help of 5 point Likert scale described above, data collected was analysed and ranking was done based on the mean values of measures of central tendency of statistics. According to Alarape and Agbaje (2010) ranking is a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or 'ranked equal to' the second. In statistics, "ranking" refers to the data transformation in which numerical or ordinal values are replaced by their rank when the data are sorted. By reducing detailed measures to a sequence of ordinal numbers, rankings make it possible to evaluate complex information according to certain criteria. Based on the table presented below, “increased reputation in the construction market” ranked highest with a mean score of 4.04 and a standard deviation value of 0.61 followed by “improvement in employees’ professional skills” recording a mean score of 3.76 and a standard deviation value of 0.82. least ranked of the

eight identified performance measure is “increased market share” having a mean score of 2.98 and a standard deviation value of 0.63.

Table 6: Assessing the various Organisational Performance Measures in Consultancy Firms.

S/N	Organisational Performance Measure	Mean	Std. Dev	Rank
1.	Financial stability	3.74	.56	3
2.	Sustained profit	3.36	.50	6
3.	Increasing new clients	3.36	.71	5
4.	Retaining clients	3.46	.91	4
5.	Employee retention	3.35	.92	7
6.	Increased market share	2.98	.63	8
7.	Improvement in employees’ professional skills	3.76	.82	2
8.	Increased reputation in the construction market	4.04	.61	1

Source: Field survey, (2021).

4.6 Assessing the influence of Knowledge Management Enabling Factors (KMEFs) on Organisational Performance.

4.6.1 Financial stability

4.6.1.1 Model Summary

The information that needs to be taken from table 6 below is the R-square (0.636) from the third column. The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 63.6% of the variation in overall satisfaction can be explained by five independent variables in the model.

Table 7 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It represents a summary of the model having R² value of 0.636 and an adjusted R² statistics of 0.617. The high adjusted R² value clearly indicates that about 61.7% of the variance in firm’s success can be accounted for by financial stability attribute. This shows that the knowledge management enabler’s attributes have high influence on performance.

Table 7: Model Summary^f

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.477 ^a	.228	.208		.79415
2	.696 ^b	.485	.458		.75750
3	.607 ^c	.368	.340		.73034
4	.797 ^d	.636	.617		.70494
5	.609 ^e	.371	.360		.68399

Predictors: (Constant), Lay emphasis on staff supporting and helping each other, Organizes job skills training courses or formal training programs, Has a high predisposition to collaborate, Advocates having trust in colleagues' decisions toward organizational interests, Is satisfied with only employees with good professional competencies

Dependent Variable: Financial stability

4.6.1.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in table 6 above is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level; hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 8 Presents the analysis of variance (ANOVA) results. It is also known as model fit result. Interesting features in the table are the F-statistics and its associated sig. value. The result show that the F-statistics is F-statistics is (5, 155) = 13.383, $p < 0.000$ which indicates that the model's variable "Knowledge Management Enabling Factors has power to predict performance significantly.

Table 8: Anova^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.057	1	10.057	15.946	.000 ^b
	Residual	75.051	119	.631		
	Total	85.107	120			
2	Regression	17.398	2	8.699	15.160	.000 ^c

	Residual	67.710	118	.574		
	Total	85.107	120			
3	Regression	22.700	3	7.567	14.186	.000 ^d
	Residual	62.408	117	.533		
	Total	85.107	120			
4	Regression	27.462	4	6.866	13.816	.000 ^e
	Residual	57.645	116	.497		
	Total	85.107	120			
5	Regression	31.306	5	6.261	13.383	.000 ^f
	Residual	53.801	115	.468		
	Total	85.107	120			

4.6.1.3 Coefficients

From the table below, looking at the sig. (p-values) first. We can see that “laying emphasis on staff supporting and helping each other” (0.000) and “Organising job skills training courses or formal training programs”, “having a high predisposition to collaborate”, “advocate having trust in colleagues’ decisions towards organisational interests” with being “satisfied with only employees with good professional competencies” (.000) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 9 Presents the results on the coefficients of the regression model. The coefficients result show that financial stability positively predict performance, standardised B = 0.463, (p<0.000). This result suggest that performance will be increased significantly by 46.3%. This implies that knowledge management enabling factors such as laying emphasis on staff supporting and helping each other, organising job skills training courses or formal training programs, having a high predisposition to collaborate, advocates having trust in colleagues’ decisions toward organisational interests, satisfied with only employees with good professional competencies 0.463, 0.337, 0.313, 0.044,

0.330, influences performance by having standardised coefficients B = 0.463, 0.337, 0.313, 0.044, 0.330 ($p > 0.000$).

Table 9: Coefficients

(Model)	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	6.855	.899		7.621	.000		
Lay emphasis on staff supporting and helping each other	0.463	.217	.673	6.742	.000	.552	1.812
Organizes job skills training courses or formal training programs	.337	.096	.281	3.508	.001	.859	1.164
Has a high predisposition to collaborate	.313	.139	.227	2.253	.026	.540	1.853
Advocates having trust in colleagues' decisions toward organizational interests	0.044	.243	.473	4.289	.000	.452	2.211
Is satisfied with only employees with good professional competencies	.330	.115	.330	2.866	.005	.416	2.405

Financial Stability

4.6.2 Sustained profit

4.6.2.1 Model summary

The information that needs to be taken from the table below is the R-square (0.185) from the third column. The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 18.5% of the variation in overall satisfaction can be explained by two independent variables as shown in the model below.

Table 10 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It

represents a summary of the model having R^2 value of 0.185 and an adjusted R^2 statistics of 0.171. the high adjusted R^2 value clearly indicates that about 18.5% of the variance in firm's success can be accounted for by sustained profit. This shows that the knowledge management enabler's attributes have high influence on performance.

This objective was achieved using regression analysis.

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.377 ^a	.142	.135	.83051
2	.430 ^b	.185	.171	.81312

4.6.2.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in the “model summary” table is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level; hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 11 Presents the analysis of variance (ANOVA) results. It is also known as model fit result. Interesting features in the table are the F-statistics and its associated sig. value. The result show that the F-statistics is (2, 118) =13.362, $p < 0.000$. The results indicate that the model's variable of Knowledge Management Enabling Factors has power to predict performance significantly.

Table 11: Anova^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	13.605	1	13.605	19.725	.000 ^b
Residual	82.081	119	.690		

	Total	95.686	120			
2	Regression	17.669	2	8.834	13.362	.000 ^c
	Residual	78.017	118	.661		
	Total	95.686	120			

Dependent Variable: Sustained profits

Predictors: (Constant), Engages in regular evaluation of employee expertise, Promotes strategic collaborations to acquire knowledge

4.6.2.3 Coefficients

From the table below, looking at the sig. (p-values) first. We can see that “Engaging in regular evaluation of employee’s expertise” (0.000) and “promoting strategic collaborations to acquire knowledge” (.000) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 12 presents the results on the coefficients of the regression model. The coefficients result show that sustained profits positively predict performance, standardised B = 0.659, ($p < 0.000$). This result suggest that performance will be increased significantly by 65.9%. This implies that knowledge enabling management factors such as engaging in regular evaluation of employee’s expertise and promoting strategic collaborations to acquire knowledge 0.659, 0.350 influences performance with a standardised coefficients B = 0.659, 0.350 ($p > 0.000$).

Table 12: Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.399	.543		4.416	.000		
Engages in regular evaluation of employee expertise	.659	.128	.513	5.152	.000	.697	1.435
Promotes strategic collaborations to acquire knowledge	.350	.141	.247	2.479	.015	.697	1.435

Sustained profits

4.6.3 INCREASING NEW CLIENTS

4.6.3.1 MODEL SUMMARY

The information that needs to be taken from the table below is the R-square (0.371) from the third column. The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 37.1% of the variation in overall satisfaction can be explained by two independent variables in the model.

Table 13 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It represents a summary of the model having R² value of 0.371 and an adjusted R² statistics of 0.360. the high adjusted R² value clearly indicates that about 37.1% of the variance in firm's success can be accounted for by these knowledge management enabling factors. This shows that the knowledge management enabler's attributes have high influence on performance.

Table 13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.550 _a	.303	.297	.82197
2	.609 _b	.371	.360	.78422

Predictors: (Constant), Advocates having trust in colleagues' ability, Facilitates experiential learning to gain knowledge

Dependent Variable: Increasing new clients

4.6.3.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in the “model summary” table is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level; hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 14 presents the analysis of variance (ANOVA) results. It is also known as model fit result. Interesting features in the table are the F-statistics and its associated sig. value. The result show that the F-statistics is (2, 118) =34.732, $p < 0.000$ The results indicate that the model's variable of Knowledge Management Enabling factors has power to predict performance significantly

Table 14: Anova^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.888	1	34.888	51.638	.000 ^b
	Residual	80.401	119	.676		
	Total	115.289	120			
2	Regression	42.720	2	21.360	34.732	.000 ^c
	Residual	72.570	118	.615		
	Total	115.289	120			

Dependent Variable: Increasing new clients

Predictors: (Constant), Advocates having trust in colleagues' ability

Predictors: (Constant), Advocates having trust in colleagues' ability, facilitates experiential learning to gain knowledge

4.6.3.3 Coefficients

From the table below, looking at the sig. (p-values) first. We can see that “Advocating having trust in colleagues’ ability” (0.000) and “Facilitating experiential learning to gain knowledge” (0.01) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 15 presents the results on the coefficients of the regression model. The coefficients result show that increasing new clients positively predict performance, standardised B = 0.808, ($p < 0.000$). This result suggest that performance will be increased significantly by 80.8%. This implies that knowledge management enabling factors; “Advocating having trust in colleagues’ ability” and Facilitating experiential learning to gain knowledge 0.808, 0.443 influences performance by having standardised coefficients B = 0.808, 0.443 ($p > 0.000, 0.001$).

Table 15: Coefficient

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.566	.543		-1.043	.299		
Advocates having trust in colleagues' ability	.972	.135	.550	7.186	.000	1.000	1.000
(Constant)	1.785	.620		-2.877	.005		
Advocates having trust in colleagues' ability	.808	.137	.457	5.899	.000	.887	1.127

Facilitates experiential learning to gain knowledge	.443	.124	.277	3.568	.001	.887	1.127
---	------	------	------	-------	------	------	-------

Dependent Variable: Increasing new clients

4.6.4 Retaining Current Clients

4.6.4.1 Model Summary

The information that needs to be taken from the table below is the R-square (0.636) in the third column. The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 63.6% of the variation in overall satisfaction can be explained by six independent variables in the model.

Table 16 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It represents a summary of the model having R² value of 0.636 and an adjusted R² statistics of 0.617. the high adjusted R² value clearly indicates that about 63.6% of the variance in firm's success can be accounted for by the knowledge management enabling factors. This shows that the knowledge management enabler's attributes have significant influence on performance. This objective was achieved using regression analysis.

Table 16: Model Summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.523 ^a	.274	.268	.82181
2	.686 ^b	.471	.462	.70443
3	.743 ^c	.552	.540	.65133
4	.753 ^d	.567	.552	.64286
5	.764 ^e	.584	.565	.63313
6	.787 ^f	.619	.599	.60812
7	.783 ^g	.613	.596	.61025
8	.797 ^h	.636	.617	.59461

Predictors: (Constant), Lay emphasis on staff supporting and helping each other, Follows written regulations and procedure, Organises job skills training courses or formal training programs, Facilitates attendance of employees in workshops and symposia, Advocates having trust in colleagues' ability, Lay emphasis on the use of information technology system to share experience and knowledge about work.

4.6.4.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in the “model summary” table is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level; hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 17 presents the analysis of variance (ANOVA) results which shows that the F-statistics is (6, 114) =33.181, $p < 0.000$. The results indicate that the model's variable of Knowledge Management Enabling Factors has power to predict performance significantly.

Table 17: Anova^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	30.326	1	30.326	44.902	.000 ^b
Residual	80.369	119	.675		
Total	110.694	120			
2 Regression	52.139	2	26.070	52.536	.000 ^c
Residual	58.555	118	.496		
Total	110.694	120			
3 Regression	61.060	3	20.353	47.977	.000 ^d
Residual	49.634	117	.424		
Total	110.694	120			
4 Regression	62.755	4	15.689	37.962	.000 ^e
Residual	47.940	116	.413		
Total	110.694	120			
5 Regression	64.597	5	12.919	32.230	.000 ^f
Residual	46.098	115	.401		
Total	110.694	120			

6	Regression	68.537	6	11.423	30.889	.000 ^g
	Residual	42.158	114	.370		
	Total	110.694	120			
7	Regression	67.868	5	13.574	36.449	.000 ^h
	Residual	42.826	115	.372		
8	Total	110.694	120		33.181	.000 ⁱ
	Regression	70.389	6	11.731		
	Residual	40.306	114	.354		
	Total	110.694	120			

Dependent Variable: Retaining current clients

Predictors: (Constant), Lay emphasis on staff supporting and helping each other, Follows written regulations and procedure, Organises job skills training courses or formal training programs, Facilitates attendance of employees in workshops and symposia, Advocates having trust in colleagues' ability, Lay emphasis on the use of information technology system to share experience and knowledge about work.

4.6.4.3 Coefficients

From the table below, looking at the sig. (p-values), We can see that laying emphasis on “Advocates having trust in colleagues’ ability” (0.000) and “Facilitating experiential learning to gain knowledge” (0.01) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 18 presents the results on the coefficients of the regression model. The coefficients result show that increasing new clients positively predict performance, standardised B = 0.933, (p<0.000). This result suggests that performance will be increased significantly by 93.3%. This implies that Knowledge Management Enabling Factors; laying emphasis on staff supporting and helping each other, following written regulations and procedures, organising job skill training courses or formal training programs, facilitating attendance of employees in workshops and symposia, advocate having trust in colleague’s ability, laying emphasis on the use of information technology system to share experience and knowledge about work, 0.933, 0.160, 0.878, 0.807, 0.731, 0.258 influences performance

by having standardised coefficients B = 0.933, 0.160, 0.878, 0.807, 0.731, 0.258 ($p > 0.039, 0.000, 0.055, 0.000, 0.000, 0.000, 0.009$).

Table 18: Coefficient

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.063	.989		2.087	.039		
Lay emphasis on staff supporting and helping each other	.933	.167	.376	5.604	.000	.708	1.413
Follows written regulations and procedure	.160	.083	.146	1.940	.055	.567	1.763
Organises job skills training courses or formal training programs	.878	.145	.642	6.057	.000	.285	3.513
Facilitates attendance of employees in workshops and symposia	.807	.141	.795	5.732	.000	.166	2.015
Advocates having trust in colleagues' ability	.731	.149	.422	4.901	.000	.430	2.326
Lay emphasis on the use of information technology system to share experience and knowledge about work	.258	.097	.174	2.670	.009	.756	1.324

Dependent Variable: Increasing new clients

4.6.5 Employee Retention

4.6.5.1 Model Summary

The information that needs to be taken from the table below is the R-square (0.309). The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 30.9% of the

variation in overall satisfaction can be explained by eight independent variables in the model.

Table 19 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It represents a summary of the model having R² value of 0.309 and an adjusted R² statistics of 0.291. the high adjusted R² value clearly indicates that about 30.9% of the variance in firm’s success can be accounted for by the knowledge management enabling factors. This shows that KM enabler’s attributes have significant influence on performance. This objective was achieved using regression analysis.

Table 19: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489 ^a	.240	.233	.93358
2	.529 ^b	.280	.268	.91239
3	.556 ^c	.309	.291	.89734

Dependent Variable: Employee retention

Predictors: (Constant), Is satisfied with only employees with good professional competencies, Incentivizesits employees monetary wise, Encourage completion of activities with issued regulations and procedures.

4.6.5.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in the “model summary” table is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level; hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 20 presents the analysis of variance (ANOVA) results which shows that the F-statistics is (3, 117) =17.457, p<0.000 The results indicate that the model’s variable of Knowledge Management Enabling Factors has power to predict performance significantly.

Table 20: Anova^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	32.664	1	32.664	37.478	.000 ^b
	Residual	103.716	119	.872		
	Total	136.380	120			
2	Regression	38.151	2	19.075	22.915	.000 ^c
	Residual	98.230	118	.832		
	Total	136.380	120			
3	Regression	42.170	3	14.057	17.457	.000 ^d
	Residual	94.210	117	.805		
	Total	136.380	120			

Dependent Variable: Employee Retention.

Predictors: (Constant), Is satisfied with only employees with good professional competencies, intensifies its employees monetary wise, Encourage completion of activities with issued regulations and procedures.

4.6.5.3 Coefficients

From the table below, looking at sig. (p-values), We can see that knowledge management enabling factors such as, “being satisfied with only employees with good professional competencies” (0.000), “incentifying its employees momentary wise”, (0.019) “encouraging completion of activities with issued regulations and procedures”, (0.027) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 21 presents the results on the coefficients of the regression model. The coefficients result show that employees’ retention positively predict performance, standardised B = 0.418, (p<0.000). This result suggest that performance will be increased significantly by 41.8%. This implies that knowledge management enabling factors; satisfied with only employees with good professional competencies, incentifying its employees momentary wise, encouraging completion of activities with issued regulations and procedures, 0.418,

0.310, 0.336 influences performance by having standardised coefficients B = 0.418, 0.310, 0.336 ($p > 0.000$, 0.019, 0.027).

Table 21: Coefficient

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.671	.931		1.795	.075		
Is satisfied with only employees with good professional competencies	.418	.115	.330	3.635	.000	.717	1.395
Incentivizes its employees monetary wise	.310	.131	.211	2.369	.019	.745	1.342
Encourage completion of activities with issued regulations and procedures	.336	.151	.181	2.234	.027	.899	1.112

Dependent Variable: Employee Retention

4.6.6 INCREASED MARKET SHARE

4.6.6.1 Model summary

The information that needs to be taken from the table below is the R-square (0.277) from the third column. The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 27.7% of the variation in overall satisfaction can be explained by eight independent variables in the model.

Table 22 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It

represents a summary of the model having R^2 value of 0.277 and an adjusted R^2 statistics of 0.258. the high adjusted R^2 value clearly indicates that about 27.7% of the variance in firm's success can be accounted for by these knowledge management enabling factors. This shows that these KM enabler's attributes have significant influence on performance. This objective was achieved using regression analysis.

Table 22: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.427 a	.182	.176	.94732
2	.486 b	.236	.223	.91940
3	.526 c	.277	.258	.89848

Dependent Variable: Increased market share

Predictors: (Constant), Accepts instantaneous and independent decision making, Promotes employees' good ability of communication, Advocates having trust in colleagues' ability.

4.6.6.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in the "model summary" table is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level. Hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 23 Presents the analysis of variance (ANOVA) results which shows that the F-statistics is (3, 117) =12.059, $p < 0.000$ The results indicate that the model's variable Knowledge Management Enabling Factors has power to predict performance significantly.

Table 23: Anova^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	23.835	1	23.835	26.559	.000 ^b
Residual	106.793	119	.897		
Total	130.628	120			
2 Regression	30.883	2	15.442	18.268	.000 ^c
Residual	99.745	118	.845		
Total	130.628	120			
3 Regression	36.177	3	12.059	14.938	.000 ^d
Residual	94.451	117	.807		
Total	130.628	120			

Dependent Variable: Increased market share

Predictors: (Constant), Accepts instantaneous and independent decision making, Promotes employees' good ability of communication, Advocates having trust in colleagues' ability.

4.6.6.3 Coefficients

From the table below, looking at the sig. (p-values), we can see that “accepting instantaneous and independent decision making” (0.439), “promoting employees' good ability of communication” (0.867), “advocating having trust in colleagues' ability” (0.426) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 24 presents the results on the coefficients of the regression model. The coefficients result show that increased market share positively predict performance, standardised B = 0.418, ($p < 0.000$). This result suggest that performance will be increased significantly by 41.8%. This implies that knowledge management enabling factors such as accepting instantaneous and independent decision making, promoting employees' good ability of communication, advocating having trust in colleagues' ability, 0.439, 0.867, 0.426 influence performance by having standardised coefficients B = 0.439, 0.867, 0.426 ($p > 0.000, 0.000, 0.012$).

Table 24: Coefficient

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.424	.958		3.572	.001		
Accepts instantaneous and independent decision making	.439	.100	.356	4.371	.000	.932	1.073
Promotes employees' good ability of communication	.867	.230	.328	3.763	.000	.814	1.229
Advocates having trust in colleagues' ability	.426	.167	.227	2.561	.012	.789	1.268

Dependent Variable: Increased market share

4.6.7 IMPROVEMENT IN EMPLOYEES' PROFESSIONAL SKILLS

4.6.7.1 Model summary

The information that needs to be taken from the table below is the R-square (0.485). The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 48.5% of the variation in overall satisfaction can be explained by seven independent variables in the model.

Table 25 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It represents a summary of the model having R² value of 0.485 and an adjusted R² statistics of 0.458. the adjusted R² value clearly indicates that about 45.8% of the variance in firm's success can be accounted for by the knowledge management enabling factors. This shows

that Improvement in employees' professional skills attributes have significant influence on performance. This objective was achieved using regression analysis.

Table 25: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.546 ^a	.298	.292	.94001
2	.592 ^b	.350	.339	.90844
3	.628 ^c	.395	.379	.88048
4	.666 ^d	.444	.424	.84783
5	.681 ^e	.464	.441	.83546
6	.696 ^f	.485	.458	.82277
7	.688 ^g	.473	.450	.82836

Dependent Variable: Improvement in employees' professional skills

Predictors: (Constant), Has a high predisposition to collaborate, Encourage completion of activities with issued regulations and procedures, Facilitates experiential learning to gain knowledge, Follows written regulations and procedure, Encourages interactions with experts.

4.6.7.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in the “model summary” table is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level; hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 26 presents the analysis of variance (ANOVA) results which shows that the F-statistics is (3, 117) =12.059, $p < 0.000$ The results indicate that the model's variable Knowledge Management Enabling Factors has power to predict performance significantly.

Table 26: Anova^a

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.684	1	44.684	50.569	.000 ^b
	Residual	105.151	119	.884		
	Total	149.835	120			
2	Regression	52.454	2	26.227	31.780	.000 ^c
	Residual	97.381	118	.825		
	Total	149.835	120			
3	Regression	59.131	3	19.710	25.424	.000 ^d
	Residual	90.704	117	.775		
	Total	149.835	120			
4	Regression	66.453	4	16.613	23.112	.000 ^e
	Residual	83.382	116	.719		
	Total	149.835	120			
5	Regression	69.566	5	13.913	19.933	.000 ^f
	Residual	80.269	115	.698		
	Total	149.835	120			
6	Regression	72.663	6	12.110	17.890	.000 ^g
	Residual	77.172	114	.677		
	Total	149.835	120			
7	Regression	70.923	5	14.185	20.672	.000 ^h
	Residual	78.911	115	.686		
	Total	149.835	120			

Dependent Variable: Improvement in employees' professional skills

Predictors: (Constant), Has a high predisposition to collaborate, Encourage completion of activities with issued regulations and procedures, Facilitates experiential learning to gain knowledge, Follows written regulations and procedure, Encourages interactions with experts

4.6.7.3 Coefficients

From the table below, looking at the sig. (p-values), we can see that “Advocate having trust in colleagues’ ability” (0.012), “Having a high predisposition to collaborate” (0.000), “Encouraging completion of activities with issued regulations and procedures” (0.000), “Facilitating experiential learning to gain knowledge” (0.000), “Following written

regulations and procedure” (0.004), “Encouraging interactions with experts” (0.035) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 27 presents the results on the coefficients of the regression model. The coefficients result shows that Improvement in employees' professional skills positively predict performance, standardised B = 0.679, ($p < 0.000$). This result suggest that performance will be increased significantly by 67.9%. This implies that knowledge management enabling factors; Advocating having trust in colleagues’ ability, Having a high predisposition to collaborate, Encouraging completion of activities with issued regulations and procedures, Facilitating experiential learning to gain knowledge, Following written regulations and procedure, Encouraging interactions with experts, 0.320, 0.679, 0.650, 620, 327, 571 influences performance by having standardised coefficients B = 0.320, 0.679, 0.650, 0.620, 0.327, 0.571 ($p > 0.012, 0.000, 0.000, 0.000, 0.04, 0.035$).

Table 27: Coefficient

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.839	1.474		.569	.570		
Advocates having trust in colleagues’ ability	.320	.200	.159	1.603	.012	.459	2.178
Has a high predisposition to collaborate	.679	.158	.372	4.294	.000	.602	1.660

Encourage completion of activities with issued regulations and procedures	.650	.170	.334	3.820	.000	.591	1.692
Facilitates experiential learning to gain knowledge	.620	.148	.340	4.192	.000	.687	1.455
Follows written regulations and procedure	.327	.110	.256	2.963	.004	.607	1.648
Encourages interactions with experts	.571	.267	.205	2.139	.035	.494	2.025

Dependent Variable: Improvement in employees' professional skills

4.6.8 INCREASED REPUTATION IN CONSTRUCTION MARKET

4.6.8.1 Model summary

The information that needs to be taken from the table below is the R-square (0.228) in the third column. The R-square is the proportion of variation in the dependent variable (overall satisfaction) that is explained by independent variables. It is expressed as a percentage. So, 22.8% of the variation in overall satisfaction can be explained by four independent variables in the model.

Table 28 shows a multiple regression analysis that estimates the influence of knowledge management enablers (independent) on organisational performance (dependent). It represents a summary of the model having R² value of 0.228 and an adjusted R² statistics of 0.208. the high adjusted R² value clearly indicates that about 22.8% of the variance in firm's success can be accounted for by the KM enabling factors. This shows that knowledge management enabler's attributes have significant influence on performance. This objective was achieved using regression analysis.

Table 28: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.310 ^a	.096	.089	1.15613
2	.405 ^b	.164	.150	1.11663
3	.477 ^c	.228	.208	1.07767
4	.462 ^d	.213	.200	1.08336

Predictors: (Constant), Encourages employees to be creative and innovative at work, Advocates having trust in colleagues' decisions toward organisational interests

Dependent Variable: Increased reputation in construction market

4.6.8.2 Analysis of variance (ANOVA)

The table below shows whether the proportion of variance explained in the “model summary” table is significant. It also tells whether the overall effect of the independent variables on overall satisfaction is significant. The sig. (or p-value) is 0.000 which is below the 0.05 level; hence, we conclude that the overall model is statistically significant, or that the variable has a significant combined influence on the dependent variable.

Table 29 presents the analysis of variance (ANOVA) results which shows that the F-statistics is (2, 118) =15.979, $p < 0.000$. The results indicate that the model's variable Knowledge Management Enabling Factors has power to predict performance significantly.

Table 29: Anova^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.939	1	16.939	12.673	.001 ^b
	Residual	159.061	119	1.337		
	Total	176.000	120			
2	Regression	28.871	2	14.435	11.577	.000 ^c
	Residual	147.129	118	1.247		
	Total	176.000	120			
3	Regression	40.120	3	13.373	11.515	.000 ^d
	Residual	135.880	117	1.161		

	Total	176.000	120			
4	Regression	37.508	2	18.754	15.979	.000 ^e
	Residual	138.492	118	1.174		
	Total	176.000	120			

Dependent Variable: Increased reputation in construction market

Predictors: (Constant), Encourages employees to be creative and innovative at work, Advocates having trust in colleagues' decisions toward organisational interests

4.6.8.3 Coefficients

From the table below, looking at the sig. (p-values), we can see that “firms that creates opportunities for informal individual development or self-learning” (0.351), “Encourages employees to be creative and innovative at work” (0.114), “Advocates having trust in colleagues' decisions toward organisational interests” (0.017) are significant predictors (or significantly related to) of overall performance. The standardised beta tells us the strength and direction of the relationships (interpreted like correlation coefficients).

Table 30 presents the results on the coefficients of the regression model. The coefficients result show that Improvement in employees' professional skills positively predict performance, standardised B = 0.351, ($p < 0.036$). This result suggest that performance will be increased significantly by 35.1%. This implies that KM enabling factors, creating opportunities for informal individual development or self-learning, encouraging employees to be creative and innovative at work, advocating having trust in colleagues' decisions toward organisational interests 1.351, 1,114, 1.017 influences performance by having standardised coefficients B = 1.351, 1,114, 1.017 ($p > 0.036, 0.000, 0.002$).

Table 30: Coefficient

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.215	1.424		2.258	.026		
Creates opportunities for informal individual development or self-learning	.351	.234	.138	1.500	.036	.779	1.283
Encourages employees to be creative and innovative at work	1.114	.253	.437	4.398	.000	.667	1.498
Advocates having trust in colleagues' decisions toward organisational interests	1.017	.327	.320	3.112	.002	.623	1.605

Dependent Variable: Increased reputation in construction market

Discussion

To ensure financial stability constitutes five Knowledge management enablers such as laying emphasis on staff supporting and helping each other, organising job skills training courses or formal training programs, having a high predisposition to collaborate, being an advocate of having trust in colleagues' decisions toward organisational interests and being satisfied with employees with good professional competencies affects performance significantly and should receive more attention. This finding exposed the importance of having well equipped and capable employees with the “can do” spirit in order to stabilise the firm’s finances. This finding goes in line with Danis and Usman (2010) study which reports that useful and usable human capital is the most important among all the resources

an organisation needs to progress. Thus, consultancy firms should capitalise on this finding to ensure financial stability.

To ensure sustained profits constitutes engaging in regular evaluation of employee expertise and promoting strategic collaboration to acquire knowledge should be performed well. This finding implies that employees could work more effectively and accordingly to bring good results on a project or business operations by collaborating with the major players from top to bottom hierarchy of the firm. Thereby bringing about client's satisfaction which in turn translates to sustained profits. This finding complies with the study of Vathanophas and Thaigam (2007) which concluded that repeated sensitisation and evaluation of employees and collaborative effort at all levels in achieving firms' common goal are major ingredients to a firm profiting in a highly competitive market.

To increase new client involves consultancy firms advocating having trust in colleague's ability and facilitating experiential learning to gain new knowledge. Generally, working with trusted and active colleagues under a favorable and encouraging environment would motivate employees and help in building the right work ethic which brings about innovative ideas that attract new clients who are looking to get their projects done in a competent manner. Of great semblance is this work to that of Olaimat and Awwad (2017) research which takes the stance that having a proactive workforce that is relentless in learning from experience is a proven way to gain more patronage. Firms looking to increase new clients should focus more on these Knowledge Management Enablers.

Retaining current clients involves laying emphasis on having trust in colleagues' ability and facilitating experiential learning to gain knowledge which is quite a good strategy to employ in order to retain clients. This conclusion could be explained by the fact that

strong performance of these KEFs allows employees to be more productive and accountable. Such individuals are frequently able to meet the needs of existing clients and hence preserve long-term ties with them. In today's construction climate, it is challenging to satisfy clients who are becoming more intelligent. Thus, this result could be highly valuable for project-based organisations to improve client satisfaction (Forcada et al. 2013). As a result, project-based businesses should be aware of this fact while dealing with existing clients.

Employee Retention involves capitalising on knowledge management enablers like being satisfied with employees with good professional competencies, incentivising its employees monetary wise and encouraging completion of activities with issued regulations with procedures significantly affect employee retentions and should be performed well. Working with trustworthy and engaged colleagues in a positive and supportive environment appears to boost employee happiness and/or long-term commitment to a firm. This finding may also be in line with Olaimat and Awwad's research (2017).

Increased Market Share involves Accepting instantaneous and independent decision making, promoting employees' good ability of communication, Advocating having trust in colleagues' ability which significantly affect employee retention should be performed well. These results could satisfy client requirements and, therefore, sustain competitive advantages in construction markets. This finding may also support Vathanophas and Thaigam's (2007) study, which claims that skilled people are an organisation's most valuable resource. Specifically, stepwise multivariate regression analysis was used to investigate the relationship between KMEFs and Organisational Performance.

Improvement in Employees' Professional Skills involves firms that advocate having trust in colleagues' ability, having a high predisposition to collaborate, encouraging completion of activities with issued regulations and procedures, facilitating experiential learning to gain knowledge, following written regulations and procedure, encouraging interactions with experts are significant predictors (or significantly related to) of overall performance and should be done well. Because the construction sector is experiencing a shortage of skilled and competent people (Nguyen et al. 2004; Teerajetgul and Charoenngam 2006; Le-Hoai et al. 2008), this conclusion may be particularly relevant to human resource management methods in project-based enterprises (Jones et al. 2010).

Increased Reputation in Construction Market involves creating opportunities for informal individual development or self-learning, encouraging employees to be creative and innovative at work, advocating having trust in colleagues' decisions toward organisational interests are significant predictors (or significantly related to) of overall performance. In general, the findings appear to indicate that project-based organisations' reputation is dependent on having trustworthy and skilled workers as well as having effective information technology systems. This finding may corroborate previous research, such as Gotsi and Wilson (2001), who claim that talented employees are one of the most important assets for building a company's corporate reputation, and Bharadwaj (2000), who claims that information technology is critical to a company's survival and growth. As a result, project-based businesses should pay attention to this discovery in order to improve their company's reputation in the construction industry.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

Below are the major findings from the study:

- I. Thirty-one (31) factors were synthesised from the Ten (10) themes of KM enablers identified in literature including the identification of Eight (8) organisational performance measures in construction consultancy firms.
- II. Consultancy firms practice majority of the KM enabling factors in their organisation with no fewer than Twenty – Eight (28) factors having a weighted mean that is above average score. This depicts that Knowledge Management practices is embedded in these firm's operations.
- III. All discipline from the category of respondents agreed that increasing firm's reputation in the construction market should be the top priority and starting point for improved performance followed by improving employee's professional skills. Among the most desired performance measure by these firms is achieving financial stability and client retainership. It appears that increasing market share is of less importance to consultancy firms.
- IV. Most of the KM enabling factors significantly influence organisational performance (19 of 31) with some influencing more than two of the performance measures in construction consultancy firms. Consequently, various shortlists of KM enabling factors that should be focused on in achieving improved performance for each measure was developed.

5.2 Conclusion

This study focused on Knowledge Management enabling factors and its influence on performance of construction consultancy firms. A survey questionnaire was used to collect data from professionals working for consultancy firms in Nigeria. A list of 31 KM enabling factors, whose ranking order of its practice in consultancy firms was presented with participants from various disciplines such as Quantity Surveying, Architecture, Building and Engineering. In addition, the KM enabling factors which significantly affect various aspects of organisational performance through 8 performance measures were developed using multiple regression analysis. Several KM enabling factors were found to have a significant impact on many organisational performance measures, such as following written regulations and procedure, having trust in colleagues' behaviors to work toward organisational goals, high predisposition to collaborate, encouraging employees to be creative and innovative at work, employees' responsibility in coordination and trust in colleagues' decisions toward organisational interests. It can be seen that most KM enabling factors relate to employees. This implies that employees play a vital role in determining construction consultancy firm's performance. Thus, consultancy companies should focus on improving employees' competence and knowledge to enhance various aspects of organisational performance.

5.3 Recommendations

Based on the findings, the following recommendations were made:

- I. Knowledge enablers are capable of improving firm's performance. Therefore, consultancy firms should practice it more to reap wide range of benefits that comes from its practice including gaining competitive advantage.

- II. The study also recommends that firms should focus on improving employees' competence and knowledge to enhance organisational performance as most of the KMEFs relate to employees.

5.4 Contribution to Knowledge

- I. The study revealed the extent of practice of KM enablers in construction consultancy firms and the most sought after performance measure.
- II. The study also established the KM enablers that influences the various organisational performance measures with two performance measures being influenced by six enablers each.
- III. The establishment of shortlists of KM enablers to focus on in order to achieve each of the identified performance measures. This gives a pinpoint approach towards achieving a particular aspect of performance for construction consultancy firms.

REFERENCES

- Abdullah, F. and Haron I. (2006). *Profile of Quantity Surveying firms in Malaysia*. Faculty of Built Environment, Malaysia University of Technology, unpublished.
- Aghimien, D., Adegbembo, T., Aghimien, E., and Awodele, O. (2018). Challenges of Sustainable Construction: A Study of Educational Buildings in Nigeria. *International Journal of Built Environment and Sustainability*, 5(1). doi: 10.11113/ijbes. v5.n1.244
- Ahmad, F., Ahmad, I., and Khan, M. (2008). Screening of free-living rhizospheric bacteria for their multiple plant growth promoting activities. *Microbiological Research*, 163(2), 173-181. doi:10.1016/j.micres.2006.04.001
- Ajmal, M., Helo, P., and Kekäle, T. (2010). Critical factors for knowledge management in project business. *Journal of Knowledge Management*, 14(1), 156-168. doi: 10.1108/13673271011015633
- Al ashwal, A., Abdul-Rahman, H., and Radzi, J. (2016). Knowledge Utilization Process in Highway Construction Projects. *Journal of Management in Engineering*, 32(4), 05016006. doi: 10.1061/(asce)me.1943-5479.0000429
- Alavi, M. and Leidner, D.E. (2001) Knowledge Management and Knowledge Management Systems: *Conceptual Foundations and Research Issues*. *MIS Quarterly*, 25, 107-136. <http://dx.doi.org/10.2307/3250961>
- Al-Sohaim. S, Montasser. Y, Manhawy. A. (2016). The Effect of Knowledge Management on Organisational Performance through Total Quality Management. *International Journal of Scientific and Engineering Research*, Volume 7, Issue 9, ISSN 2229-5518
- Anumba, C., Robinson, H., Carrillo, P., and Al-Ghassani, A. (2005). Knowledge management practices in large construction organisations. *Engineering, Construction and Architectural Management*, 12(5), 431-445. doi: 10.1108/09699980510627135
- Barbiero, R., Tuchman, M., Warren, G., and Rockwell, D. (2002). Evidence of recovery from phosphorus enrichment in Lake Michigan. *Canadian Journal of Fisheries and Aquatic Sciences*, 59(10), 1639-1647. doi: 10.1139/f02-132
- Becerra-Fernandez, I., and Sabherwal, R. (2014). *Knowledge Management*. doi: 10.4324/9781315715117
- Bennion F. (1969). *Professional ethics: The consultant professions and their codes*
- Bharadwaj AS. 2000. A resource-based perspective on information technology capability and firm performance: an empirical investigation. *MIS Quarterly*. 24(1):169–196.

- Bhatt, G. (2001). Knowledge management in organisations: examining the interaction between technologies, techniques, and people. *Journal of Knowledge Management*, 5(1), 68-75. doi: 10.1108/13673270110384419
- Bolisani and Handzic, (2015). Advances in Knowledge Management. *Knowledge Management and Organisational Learning*. doi: 10.1007/978-3-319-09501-1
- Bostrom, R. P., Heinen, J.S. (1977). MIS Problems and Failures: A Socio-Technical Perspective, Part II: The Application of Socio-Technical Theory", *MIS Quarterly*, Vol. 1, No. 3, <http://www.iei.liu.se/is/edu/courses/725a04/kurslitteratur/1.107778/MISproblemsII.pdf>. Last access: 05JAN2010.
- Brown S., and Duguid P. (2000). *Knowledge and organisation: A social-practice perspective*. Xerox Palo Research center. 3333 Coyote Hill Road Palo Alto, California. 94304.
- Carrillo, P., Robinson, H., Anumba, C., and Al-Ghassani, A. (2004). Knowledge management practices in large construction organisations. *Engineering, Construction and Architectural Management*, 12(5), 431-445. doi: 10.1108/09699980510627135
- Carr-Saunders, A. M. (1966). *Professions, their organisation and place in society*. Oxford: The Clarendon Press.
- Cavusgil T., Calantone S., and Zhao, Y. (2003). Tacit knowledge transfer and firm innovation capability. *Journal of Business and Industrial Marketing*, 18(1), 6-21. doi: 10.1108/08858620310458615
- Cerchione, R., Esposito, E., and Spadaro, M. (2016). A literature review on knowledge management in SMEs. *Knowledge Management Research and Practice*, 14(2), 169-177. doi: 10.1057/kmrp.2015.12
- Chase, R. (1997). The Knowledge-Based Organisation: An International Survey. *Journal of Knowledge Management*, 1(1), 38-49. doi: 10.1108/eum0000000004578
- Chawla, D., and Joshi, H. (2011). Impact of Knowledge Management on Learning Organisation in Indian Organisations-A Comparison. *Knowledge and Process Management*, 18(4), 266-277. doi: 10.1002/kpm.384
- Chen, L., and Mohamed, S. (2008). The strategic importance of tacit knowledge management activities in construction. *Construction Innovation*, 10(2), 138-163. doi: 10.1108/14714171011037165
- Clark J. and Soliman f. (1999). A graphical method for assessing knowledge-based investments. *Journal of logistics and information management*. Vol 12 no 1. Pp. 63-77.
- Cooke, N., Gorman, J., Myers, C., and Duran, J. (2013). Interactive Team Cognition. *Cognitive Science*, 37(2), 255-285. doi: 10.1111/cogs.12009.

- Corbin, R., Dunbar, C., and Zhu, Q. (2007). A three-tier knowledge management scheme for software engineering support and innovation. *Journal of Systems and Software*, 80(9), 1494-1505. doi: 10.1016/j.jss.2007.01.013
- Dang, C., Le-Hoai, L., and Kim, S. (2018). Impact of knowledge enabling factors on organisational effectiveness in construction companies. *Journal of Knowledge Management*, 22(4), 759-780. doi: 10.1108/jkm-08-2016-0350
- Dang, C.N., Le-Hoai, L., and Peansupap, V. (2019). Linking knowledge enabling factors to organisational performance: Empirical study of project-based firms. *International Journal of Construction Management*, DOI: 10.1080/15623599.2019.1637097.
- Danis R., Usman A. (2010). Impact of reward and recognition on job satisfaction and motivation: An empirical study from Pakistan. *IJBM*. 5(2):159–167.
- Davenport, T. (1997). Ten principles of knowledge management and four case studies. *Knowledge and Process Management*, 4(3), 187-208. doi: 10.1002/(sici)1099-1441(199709)4:3<187::aid-kpm99>3.0.co;2-a
- Davenport, T.H. and Prusak, L., 2000. Working Knowledge: How Organisations Manage What
- Davenport, T.H. and Prusak, L. (2000). *Working Knowledge: How Organisations Manage What They Know*, Harvard Business School Press.
- Degryse, B., Hans, M. and Nguyen, G. (2004). *Interbank Exposure: An Empirical Examination of Systemic Risk in the Belgian Banking System* Center Discussion Paper No. 2004-04, Available at SSRN: <https://ssrn.com/abstract=556944> or <http://dx.doi.org/10.2139/ssrn.556944>
- Demarest, M. (1997). *Understanding knowledge management*, Long range planning, 30(3), 321-384.
- Drucker, P.F. (1993), *Post-Capitalist Society*, Harper Business, New York, NY.
- Drucker, P.F. (2003), *A Functioning Society*, Selections from Sixty-five Years of Writing on
- Duy Nguyen, L., Ogunlana, S., and Thi Xuan Lan, D. (2004). A study on project success factors in large construction projects in Vietnam. *Engineering, Construction and Architectural Management*, 11(6), 404-413. doi: 10.1108/09699980410570166
- Egbu C., Botterill K., Bates M., (1999). The influence of knowledge management and intellectual capital on organisational innovations.

- Ekambaram M., Bhat V. and Padiyath A. (2010). Knowledge, attitude and practice of breastfeeding among postnatal mothers. *Current Pediatric Research* 14(2):119-124.
- Eppler, M., and Sukowski, O. (2001). Managing team knowledge: core processes, tools and enabling factors. *European Management Journal*, 18(3), 334-341. doi: 10.1016/s0263-2373(00)00015-3
- Esmi, R., and Ennals, R. (2009). Knowledge management in construction companies in the UK. *AI and SOCIETY*, 24(2), 197-203. doi: 10.1007/s00146-009-0202-9
- Fellows, R. and Liu, A. M. M. (1997), *Research Methods for Construction*, 2nd ed. Blackwell Publishing, Malden, MA.
- Ferreira, T., Costa, A., Vicente, R., and Varum, H. (2015). A simplified four-branch model for the analytical study of the out-of-plane performance of regular stone URM walls. *Engineering Structures*, 83, 140-153. doi: 10.1016/j.engstruct.2014.10.048
- Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.
- Fong P., and Chu, L. (2006). Exploratory Study of Knowledge Sharing in Contracting Companies: A Sociotechnical Perspective. *Journal of Construction Engineering and Management*, 132(9), 928-939. doi: 10.1061/(asce)0733-9364(2006)132:9(928)
- Fong, P. and Choi, S. (2009) The Processes of Knowledge Management in Professional Services Firms in the Construction Industry: A Critical Assessment of Both Theory and Practice. *Journal of Knowledge Management*, 13, 110-126.
- Forcada, N., Fuertes, A., Gangolells, M., Casals, M., and Macarulla, M. (2013). Knowledge management perceptions in construction and design companies. *Automation in Construction*, 29, 83-91. doi: 10.1016/j.autcon.2012.09.001
- Freidson E. (1994). *Professionalism reborn: theory, prophesy and policy*. University of Chicago press. <https://doi.org/10.1108/13673270910942736>
- Gann, D., 2001, Putting academic ideas into practice: technological progress and the absorptive capacity of construction organisations, *Construction Management and Economics*, 19(3), 321-30.
- Garvin, D.A. (1998) The Process of Organising and Management. <http://sloanreview.mit.edu/article/the-processes-of-organisation-and-management/>.
- Giese, J.L. and Cote, J.A. (2000) Defining Consumer Satisfaction. *Academy of Marketing Science Review*, 1, 1-27.
- Gold A., Malhotra A., Segars A. (2001). Knowledge management: an organisational capabilities perspective. *Journal of management information systems*.

- Gomes, R., Liddle, J., and Gomes, L. (2010). A Five-Sided Model of Stakeholder Influence. *Public Management Review*, 12(5), 701-724. doi: 10.1080/14719031003633979
- Gotsi M, Wilson A. (2001) Corporate reputation management: “living the brand. *Manage Decis.* 39(2):99–104.
- Grant, R. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(S2), 109-122. doi: 10.1002/smj.4250171110
- Gunnlaugsdottir, J. (2003). Seek and you will find, share and you will benefit: organising knowledge using groupware systems. *International Journal of Information Management*, 23(5), 363-380. doi: 10.1016/s0268-4012(03)00064-1
- Hair, J. F. (2006). *Multivariate data analysis*. Pearson Education India.
- Hansen, B. von Oetinger (2001). *Introducing T-shaped managers*. Knowledge management's next generation. *Business Harvard business review*
- Hansen, M.T., Nohria, N. and Tierney, T. (1999), “What’s your strategy for managing knowledge?”, *Harvard Business Review*, Vol. 77 No. 2, pp. 106-16
- Haque, A. (2013). Outlining a Psychotherapy Model for Enhancing Muslim Mental Health within an Islamic Context. *International Journal for Psychology of Religion*.
- Hedlund, G. (1994) A Model of Knowledge Management and the n-Form Corporation. *Strategic Management Journal*, 15, 73 90. <https://doi.org/10.1002/smj.4250151006>
- Ho, C. (2009). The relationship between knowledge management enablers and performance. *Industrial Management and Data Systems*, 109(1), 98-117. doi: 10.1108/02635570910926618
- Hollmann and Elliott (2006). *Working in the Global Economy: How to Develop and Manage Your Career Across*
- Holsapple, C., and Joshi, K. (2001). An investigation of factors that influence the management of knowledge in organisations. *The Journal of Strategic Information Systems*, 9(2-3), 235-261. doi: 10.1016/s0963-8687(00)00046-9
- IANSITI, M. (2009). Science-based product development: an empirical study of the mainframe computer industry. *Production and Operations Management*, 4(4), 335-359. doi: 10.1111/j.1937-5956.1995.tb00298.x
- Ibrahim, A. D. (2013). *Research Methods Lecture Note QTY5 316*. Department of Quantity Survey. Ahmadu Bello University Zaria.

- Ichijo, K., Krogh, G.V. and Nonaka I. (1998). “Knowledge enablers”, in Krogh, G.V., Roos, J. and Kleine, D. (eds.), *Knowing in Firms: Understanding, Managing and Measuring Knowledge*, Sage, London, pp. 173–203.
- Idrus, A., Khamidi, F., and Sodangi, M. (2010). Maintenance Management Framework for Conservation of Heritage Buildings in Malaysia. *Modern Applied Science*, 4(11). doi: 10.5539/mas.v4n11p66
- Islam, T., Ahmed, A. and Ahmad, U.N.U. (2015), “The influence of organisational learning culture and perceived organisational support on employees’ affective commitment and turnover intention”, *Nankai Business Review International*, Vol. 6 No. 4, pp. 417-443
- Jarvenpaa, S., and Staples, D. (2000). The use of collaborative electronic media for information sharing: an exploratory study of determinants. *The Journal of Strategic Information Systems*, 9(2-3), 129-154. doi: 10.1016/s0963-8687(00)00042-1
- Jarvis and MacNee, (2011).ISO 9000 Quality Systems Handbook-updated for the ISO 9001: 2015 standard.
- Javernick-Will, A. (2012). Motivating Knowledge Sharing in Engineering and Construction Organisations: Power of Social Motivations. *Journal of Management in Engineering*, 28(2), 193-202. doi: 10.1061/(asce)me.1943-5479.0000076
- Johannessen, J., Olsen, B., and Olaisen, J. (1999). Aspects of innovation theory based on knowledge-management. *International Journal of Information Management*, 19(2), 121-139. doi: 10.1016/s0268-4012(99)00004-3
- Jones S., Ross A, Sertyesilisik B. (2010). Testing the unfolding model of voluntary turnover on construction professionals. *Constr. Manag. Econ.* 28(3):271–285.
- Jonker, J., and Pennink, B. (2010). The Essence of Research Methodology. doi: 10.1007/978-3-540-71659-4
- Kadiri, D. S. and Ayodele, E. M. (2013). Constraints to quantity surveying awareness in Nigeria. *Civil and Environmental Research*. 3(11), 17-21
- Kale, S. and Karaman, E.A. (2011) Evaluating the Knowledge Management Practices of Construction Firms by Using Importance—Comparative Performance Analysis Maps. *Journal of Construction Engineering and Management*, 137, 1142-1152. [http://dx.doi.org/10.1061/\(ASCE\)CO.1943-7862.0000369](http://dx.doi.org/10.1061/(ASCE)CO.1943-7862.0000369)
- Kale, S. and Karaman, A. (2012). Benchmarking the knowledge management practices of construction firms. *Journal of Civil Engineering and Management*, 18(3), 335-344. doi: 10.3846/13923730.2012.698910

- Kanapeckiene, L., Kaklauskas, A., Zavadskas, E., and Seniut, M. (2010). Integrated knowledge management model and system for construction projects. *Engineering Applications of Artificial Intelligence*, 23(7), 1200-1215. doi: 10.1016/j.engappai.2010.01.030
- Kaplan, R.S. and Norton, D.P. (1993) Putting the Balanced Scorecard to Work, *Harvard Business Review*, vol. 71, no. 5, pp. 134–147
- Kharabsheh R, Ihab M, Sawadha S. (2012). Knowledge management practices (KMPs) and its impact on organisational performance in pharmaceutical firms. *European Journal of Economics, Finance and Administrative Sciences*.
- Kingsley, O.D. (2010). Incessant Incidents of Building Collapse in Nigeria: A Challenge to Stakeholders. *Global Journal of Researches in Engineering* Vol.10 Issue 4 (Version 1.0).
- Kivrak S. and Arslan G. (2008). Critical factors to company success in the construction industry. Eskisehir Technical University.
- Kivrak, S., Arslan, G., Tuncan, M. and Birgonul, M.T. (2014). Impact of national culture on knowledge sharing in international construction projects. *Canadian Journal of Civil Engineering*, 41(7), pp.642–649
- Kor, Y.Y., Mahoney J.T. (2004). Edith Penrose's 2004 contributions to the resource-based view of the firm. *Journal of Management Studies* 41(1): 183–191.
- Krejcie, R.V., and Morgan, D.W., (1970). *Determining Sample Size for Research Activities*. Educational and Psychological Measurement.
- Krogh, G. (1998). Care in Knowledge Creation. *California Management Review*, 40(3), 133-153. doi: 10.2307/41165947
- Kwaku A. (2007). A model for predicting the performance of project managers in mass house building projects in Ghana. Kwame Nkrumah University of Science.
- Leaders. London: Harper Collins Tah, J.H.M. and Carr, V. (2001) Towards a Framework for Project Risk Knowledge Management in the Construction Supply Chain. *Advances in Engineering Software (Compendex)*, 32, 835-846.
- Lee, H. and Choi, B. (2003). Knowledge management enablers, processes, and organisational performance: An integrative view and empirical examination. *Journal of Management Information Systems*, 20, 179-288. <http://web.ebscohost.com.ezp.waldenulibrary.org>
- Leedy, P. D. and Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed). Upper Saddle River NJ: Pearson.

- Le-Hoai L., Lee Y. and Lee J. (2008). Delay and cost overruns in Vietnam large construction projects: A comparison with other selected countries. *KSCE J Civ Eng.* 12(6):367–377.
- Liao, S., and Wu, C. (2009). The Relationship among Knowledge Management, Organisational Learning, and Organisational Performance. *International Journal of Business and Management*, 4(4). doi: 10.5539/ijbm.v4n4p64
- Liebesskind P., (1996). *Knowledge, strategy and the theory of firms*. School of business administration, university of south California, Los Angeles, California, U.S.A.
- Long J. (1997). *Regression Models for Categorical and Limited Dependent Variables*. Advanced Quantitative Techniques in the Social Sciences Number 7. Sage Publications: Thousand Oaks, CA.
- Løwendahl, B., Skjølsvik, T., and Perner, F. (2000). Strategic management of professional service firms: Reviewing ABS journals and identifying key research themes. *Journal of Professions and Organisation*, 4(2), 203-239. doi: 10.1093/jpo/jox005
- Lubit, R. (2001) Tacit Knowledge and Knowledge Management: The Keys to Sustainable Competitive Advantage. *Organisational Dynamics*, 4, 164-178. [https://doi.org/10.1016/S0090-2616\(01\)00026-2](https://doi.org/10.1016/S0090-2616(01)00026-2)
- Madhavan, R., and Grover, R. (1998). From embedded knowledge to embodied knowledge: New product development as knowledge management. *Journal of Marketing*, 62, 1-12. <http://dx.doi.org/10.2307/1252283>
- Manfredi Latilla, V., Frattini, F., MesseniPetruzzelli, A., and Berner, M. (2018). Knowledge management, knowledge transfer and organisational performance in the arts and crafts industry: a literature review. *Journal of Knowledge Management*, 22(6), 1310-1331. doi: 10.1108/jkm-08-2017-0367
- Mårtensson, M. (2000). A critical review of knowledge management as a management tool. *Journal of Knowledge Management*, 4(3), 204-216. doi: 10.1108/13673270010350002
- Martinez-Conesa, I., Soto-Acosta, P., and Carayannis, E. (2017). On the path towards open innovation: assessing the role of knowledge management capability and environmental dynamism in SMEs. *Journal of Knowledge Management*, 21(3), 553-570. doi: 10.1108/jkm-09-2016-0403
- Mason, D., and Pauleen, D. (2003). Perceptions of knowledge management: a qualitative analysis. *Journal of Knowledge Management*, 7(4), 38-48. doi: 10.1108/13673270310492930

- Mbugua L. and Phil H. (1999). A framework for determining critical success factors influencing construction business performance.
- McC Campbell, A.S., Clare, L.M. and Gitters, S.H. (1999), "Knowledge management: the new challenge for the 21st century", *Journal of Knowledge Management*, Vol. 3 No. 3, pp. 172-79
- Moffett, S., McAdam, R., and Parkinson, S. (2003). An empirical analysis of knowledge management applications. *Journal of Knowledge Management*, 7(3), 6-26. doi: 10.1108/13673270310485596
- Mohd Zin, Z., Abdul Hamid, A., Osman, A., Saari, N., and Misran, A. (2007). Isolation and Identification of Antioxidative Compound from Fruit of Mengkudu (*Morindacitrifolia*L.). *International Journal of Food Properties*, 10(2), 363-373. doi: 10.1080/10942910601052723
- Montgomery, D. C., and G. C. Runger (2011). *Applied Statistics and Probability for Engineers*. 5th edition. Wiley, New York
- Morenikeji, W. (2006) *Research and Analytical Methods*. Jos University Press Ltd, Jos.
- Nankai Business Review International, Vol. 6 No. 4, pp. 417-443
- Ndlela, L., and du Toit, A. (2001). Establishing a knowledge management programme for competitive advantage in an enterprise. *International Journal of Information Management*, 21(2), 151-165. doi: 10.1016/s0268-4012(01)00007-x
- Neely, A., Gregory, M., and Platts, K. (1995). Performance measurement system design. *International Journal of Operations and Production Management*, 15(4), 80-116. doi: 10.1108/01443579510083622
- Nguyen D., Ogunlana S., Quang T. and Lam K. (2004). Large construction projects in developing countries: a case study from Vietnam. *Int J Project Manage.* 22(7):553–561.
- Nonaka, I. (1991). *The Knowledge Creating Company*. Harvard Business Review, 69, 96-104.
- Nonaka, I. and Konno, N. (1998) The Concept of Ba: Building a Foundation for Knowledge Creation. *California Management Review*, 40, 40-54. <https://doi.org/10.2307/41165942>
- Nonaka, I. and Takeuchi, H. (1995) *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press, New York.
- Nunes, T., Bryant, P., Barros, R., and Sylva, K. (2005). The relative importance of two different mathematical abilities to mathematical achievement. *British Journal*

of Educational Psychology, 82(1), 136-156. doi: 10.1111/j.2044-8279.2011.02033.x

- Nwachukwu, C.C. and Nzotta, S.M., (2010). Quality factors indexes: a measure of project success constraints in a developing economy. *Interdiscipline. J. Contemp. Res. Bus.* 2 (2), 505.
- O'Dell, C. and Grayson, C. (1998). If Only We Knew What We Know: Identification and Transfer of Internal Best Practices. *California Management Review*, 40, 154-174. <https://doi.org/10.2307/41165948>
- Ogbu, C. (2015). Marketing Strategies and Performance of Indigenous Construction Firms in Nigeria. *Journal of Construction in Developing Countries*, 22(1), 1-19. doi: 10.21315/jcdc2017.22.1.1
- Ojo, G. K. (2017). Effective marketing strategies and the Nigerian construction professionals, African
- Oke, A. E. and Ogunsemi, D. R. (2010). Competencies of quantity surveyors as value managers in a developing economy. Proceeding of the Construction and Building research conference of the Royal Institute of Chartered Surveyors held at the University of Cape Town, South Africa, 10 – 11 September, Pp 23 – 38
- Oke, A., Oyewobi, L., T., and Jimoh, R. (2019). Influence of organisational commitment on work–life balance and organisational performance of female construction professionals. *Engineering, Construction and Architectural Management*, 26(10), 2243-2263. doi: 10.1108/ecam-07-2018-0277
- Olaimat D, Awwad B. (2017). Exploring the relationship between human resource practices and employee retention in the house of representatives in Jordan. *JIBRM*. 8(10):178–185
- Olusola R. and Iyagba R. (2012). Factors affecting contractor performance: a comparative study of non-value-adding activities in Nigeria and Indonesia. *Business*
- Osborne D, Gaebler T. (2005). *Reinventing Government*. Reading, MA: Addison-Wesley. 405 pp.
- Osunsanwo H., and Oluwasuji, J., (2019). Evaluating quantity surveying firms' performance: An application of balanced scorecard technique *International Journal of Productivity and Performance Management*, vol. 69, issue 1, 134-152 *Journal of Marketing Management* 3(12), 303-311
- Oyewobi, L.O., Bolaji, S. and Muhammad-Jamil, A. (2012). Job satisfaction and job commitment; A study of Quantity Surveyors in Nigeria Public service. *International Journal of Business Management*, 7 (5), 179-192

- Pan, S., and Scarbrough, H. (1998). A Socio-Technical View of Knowledge Sharing at Buckman Laboratories. *Journal of Knowledge Management*, 2(1), 55-66. doi: 10.1108/eum0000000004607
- Pathirage, C. P., Amaratunga, D and Haigh, R. (2006). Managing construction workers and their tacit knowledge in a knowledge environment: A conceptual framework. In: *6th International Postgraduate Research Conference in the Built and Human Environment*, 6-7th April 2006, Delft University of Technology and TNO, Delft University, Netherlands.
- Payal, R., Ahmed, S., and Debnath, R. (2019). Impact of knowledge management on organisational performance. *VINE Journal of Information and Knowledge Management Systems*, 49(4), 510-530. doi: 10.1108/vjikms-07-2018-0063
- Peteraf, M.A. (1993) The Cornerstones of Competitive Advantage: A Resource-Based View. *Strategic Management Journal*, 14, 179-191. <http://dx.doi.org/10.1002/smj.4250140303>
- Polanyi, M. (1958). Personal knowledge: Towards a post-critical philosophy. London: Routledge and Kegan Paul.
- Rezgui, Y., Hopfe, C., and Vorakulpipat, C. (2010). Generations of knowledge management in the architecture, engineering and construction industry: An evolutionary perspective. *Advanced Engineering Informatics*, 24(2), 219-228. doi: 10.1016/j.aei.2009.12.001
- Ribiero F., (2009). Enhancing knowledge management in construction firms. *Construction innovation*. 9(3), 268-284.
- Riggins, F., and Rhee, H. (1999). Developing the Learning Network Using Extranets. *International Journal of Electronic Commerce*, 4(1), 65-83. doi: 10.1080/10864415.1999.11518357
- Robinson, H., Carrillo, P., Anumba, C., and Al-Ghassani, A. (2005). Knowledge management practices in large construction organisations. *Engineering, Construction and Architectural Management*, 12(5), 431-445. doi: 10.1108/09699980510627135
- Ruan, X., Ochieng, E.G., Price, A.D. and C.O. Egbu (2012), 'Knowledge integration process in construction projects: a social network analysis approach to compare competitive and collaborative working', *Construction Management and Economics*, 30(1), 5-19.
- Ryle, A. (1984). How can we compare different psychotherapies? Why are they all effective?. *British Journal of Medical Psychology*, 57(3), 261-264. doi: 10.1111/j.2044-8341.1984.tb02587.x

- Saitoh, M. (1998). Mammalian thioredoxin is a direct inhibitor of apoptosis signal-regulating kinase (ASK) 1. *The EMBO Journal*, 17(9), 2596-2606. doi: 10.1093/emboj/17.9.2596
- Sarros C., Gray J., Densten I., and Cooper B. (2005). The organisational culture profile revisited and revised: an Australian perspective.
- Sarvary, M. (1999). Knowledge Management and Competition in the Consulting Industry. *California Management Review*, 41(2), 95-107. doi: 10.2307/41165988
- Saunders, M., Lewis, P. and Thornhill, A. (2007). *Research Methods for Business Students*. 4th Edition, Financial Times Prentice Hall, Edinburgh Gate, Harlow.
- Sawhney, M., and Prandelli, E. (2000). Communities of Creation: Managing Distributed Innovation in Turbulent Markets. *California Management Review*, 42(4), 24-54. doi: 10.2307/41166052
- Scarbrough, H., Swan, J., Newell, S., and Hislop, D. (1999). Knowledge management and innovation: networks and networking. *Journal of Knowledge Management*, 3(4), 262-275. doi: 10.1108/13673279910304014
- Schulz, M., and Jobe, L. A. (2001). Codification and Tacitness as Knowledge Management Strategies: An Empirical Exploration. *Journal of High Technology Management Research*, 12, 139-165. [https://doi.org/10.1016/S1047-8310\(00\)00043-2](https://doi.org/10.1016/S1047-8310(00)00043-2)
- Senaratne, S. and Sexton, M. (2008) Managing Construction Project Change: A Knowledge Management Perspective. *Construction Management and Economics*, 26, 1303-1311. <https://doi.org/10.1080/01446190802621044>
- Shehu U., Mohammed S., Bashir M., and Alhassan M., (2020). Relationship between total quality management and organisational performance: empirical evidence from selected airlines in Nigeria aviation industry. *Asian People Journal (APJ)*, 3(1), 30-44. doi: 10.37231/apj.2020.3.1.128
- Sinclair, D., and Zairi, M. (1995). Performance measurement as an obstacle to TQM. *The TQM Magazine*, 7(2), 42-45. doi: 10.1108/09544789510081117
- Skyrme, D.J. and Amidon, D.M. (1997). *Creating the knowledge-based business*. London: Business Intelligence Limited.
- Soliman, F., and Spooner, K. (2000). Strategies for implementing knowledge management: role of human resources management. *Journal of Knowledge Management*, 4(4), 337-345. doi: 10.1108/13673270010379894

- Srikantaiah T., and Koenig M. (2000). *Knowledge management for the information professional*. Medford, N. J.: Published for the American Society for Information Science by Information Today
- Stonehouse, G., and Pemberton, J. (2000). Organisational learning and knowledge assets – an essential partnership. *The Learning Organisation*, 7(4), 184-194. doi: 10.1108/09696470010342351
- Sveiby K. (2002). Organising for effective knowledge work. Hanken school of economics.
- Takim R., Akintoye A. and Kelly J. (2003). Performance measurement systems in construction.
- Tan HC, Carrillo P, Anumba C, Kamara JM, Bouchlaghem D, Udejaja C. (2006). Live capture and reuse of project knowledge in construction organisations. *KnowlManag Res Pract*. 4(2):149–161.
- Teece D., and Pisano G., (2003). *The Dynamic Capabilities of Firms*. Institute of Management, Innovation and Organisation, Harvard University, Boston, MA, USA
- Teerajetgul, W., and Chareonngam, C. (2008). Tacit knowledge utilization in Thai construction projects. *Journal of Knowledge Management*, 12(1), 164-174. doi: 10.1108/13673270810852467
- Teerajetgul, W., and Charoenngam, C. (2006). Factors inducing knowledge creation: empirical evidence from Thai construction projects. *Engineering, Construction and Architectural Management*, 13(6), 584-599. doi: 10.1108/09699980610712382
- Teerajetgul, W., Chareonngam, C., and Wethyavivorn, P. (2009). Key knowledge factors in Thai construction practice. *International Journal of Project Management*, 27(8), 833-839. doi: 10.1016/j.ijproman.2009.02.008
- Treacy M. and Wiersema, F. (1995). *The Discipline of Market Leaders*. London: Harper Collins
- Tzortzaki A., and Mihiotis, A. (2014). A Review of Knowledge Management Theory and Future Directions. *Knowledge and Process Management*, 21(1), 29-41. doi: 10.1002/kpm.1429
- Usman N. D., Inuwa, I. I., Iro, A. I., and Dantong, J. S. (2012). Training of Contractors Craftsmen for Productivity Improvement in the Nigerian Construction Industry. *Journal of Engineering and Applied Sciences*, 4: 1-12
- Varadarajan P., and Menon, A. (1992). A Model of Marketing Knowledge Use within Firms. *Journal of Marketing*, 56(4), 53. doi: 10.2307/1251986

- Vathanophas V., Thai-Ngam J. (2007). Competency requirements for effective job performance in Thai public sector. *CMR*. 3(1):45–70.
- Velden C., and Gallina G. (2002). Environmental Vertical Wind Shear and Tropical Cyclone Intensity Change Utilizing Satellite Derived Wind Information. 25th Conference on Hurricanes and Tropical Meteorology, San Diego, 28-29 April 2002, 172-173.
- Viljoen C. (2010). Quality factors contributing to the generation of construction waste. Theses and Dissertations of Cape Peninsula University of Technology, Paper 305.
- Wenger E., and Snyder, W. (2000). *Communities of Practice: The Organisational Frontier*. *Harvard Business Review*, 78, (1), 139-145
- Wernerfelt B., (1994). The Resource-based view of firms: ten years after. Sloan school of management.
- Wilson, B. (2002). Towards a comprehensive model of cognitive rehabilitation. *Neuropsychological Rehabilitation*, 12(2), 97-110. doi:10.1080/09602010244000020
- Wimmer R., and Dominick, J. R., (2011). *Mass Media Research: An Introduction*. 9th Edition Belmont: Wadsworth Publishing Company.
- Wu, I., and Chen, J. (2014). Knowledge management driven firm performance: the roles of business process capabilities and organisational learning. *Journal of Knowledge Management*, 18(6), 1141-1164. doi: 10.1108/jkm-05-2014-0192
- Xenos, M., and Christodoulakis, D. (1997). Measuring perceived software quality. *Information and Software Technology*, 39(6), 417-424. doi:10.1016/s0950-5849(96)01154-8
- Yeh, Y., Lai, S., and Ho, C. (2006). Knowledge management enablers: a case study. *Industrial Management and Amp; Data Systems*, 106(6), 793-810. doi: 10.1108/02635570610671489
- Yu, D., and Yang, J. (2016). Knowledge Management Research in the Construction Industry: A Review. *Journal of The Knowledge Economy*, 9(3), 782-803. doi: 10.1007/s13132-016-0375-7
- Zhang, F.F. Ng F. (2013). Explaining knowledge-sharing Intention in construction teams in Hong Kong. *J. Construct. Eng. Manag.*, 139 (3), pp. 280-293.
- Zhang P., NgF. (2012). Analysis of knowledge sharing behaviour in construction teams in Hong Kong. *Construct. Manag. Econ.*, 30 (7), pp. 557-574.

APPENDIX

Appendix 1: SURVEY QUESTIONNAIRE

DEPARTMENT OF QUANTITY SURVEYING,
FACULTY OF ENVIRONMENTAL DESIGN,
AHMADU BELLO UNIVERSITY ZARIA,
KADUNA STATE.

SEPTEMBER, 2021

Dear Respondent,

I am undertaking a research as part of my MSc Program in the Department of Quantity Surveying, Ahmadu Bello University-Zaria on *Assessing the Influence of Knowledge Enabling Factors on Organisational Performance of Consultancy firms in Nigerian Construction Industry*. On completion, the study will provide a clear insight on how consultancy firms could formulate appropriate Knowledge Enabling Factors based management strategies to improve various organisational performance aspects effectively.

It would be highly appreciated if the questionnaire is to be filled by Principal Partner or Senior Personnel in the firm. All information given would be used strictly for the research work and treated confidentially. Your valuable contributions towards the success of this work will be highly appreciated. For further clarification, you can contact me through the email or phone number provided below. Thank you very much for your time.

Yours faithfully,

Mustapha Yusuf FARUQ.

08130431286

fayosmusty@gmail.com

SECTION A: Firm's Details

Kindly tick (√) where appropriate.

1. Name of your firm (optional)

2. Years of existence of the firm

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

3. Firm Size

Less than 10 employees [] 10 - 50 employees [] 50 - 100 employees []
 More than 100 employees []

4. Type of service rendered

Architecture [] Building Engineering Services [] Quantity Surveying []
 Structural/Civil Engineering Services []

5. What is the structure of the firm

Sole Proprietorship [] Partnership [] Consortium []

Section B: Knowledge Enabling Factors

The followings are factors that enable knowledge management practices in an organisation, using a numbered scale of 1 to 5 where, 1= Strongly Disagree, 2= Disagree, 3= Somewhat Agree, 4= Agree and 5= Strongly Agree, please tick the appropriate box to indicate your degree of agreement to the following statements;

S/N	KNOWLEDGE ENABLING FACTORS (This firm)	1	2	3	4	5
1	Promotes strategic collaborations to acquire knowledge					
2	Has a culture to promote knowledge sharing					
3	Encourages interactions with experts					
4	Encourages employees to be creative and innovative at work					
5	Engages in regular evaluation of employee expertise					
6	Encourage completion of activities with issued regulations and procedures					
7	Maintains compliance with formal regulations or plans while initiating contacts and communication					
8	Follows written regulations and procedure					
9	Encourage employees to make their own decisions					
10	Allow employees to take action without supervisor					

S/N	KNOWLEDGE ENABLING FACTORS CONT'D (This firm)	1	2	3	4	5
11	Accepts instantaneous and independent decision making					
12	Has a high predisposition to collaborate					
13	Lay emphasis on staff supporting and helping each other					
14	Relinquishes the responsibility of coordination to employees most times					
15	Advocates having trust in colleagues' ability					
16	Advocates having trust in colleagues' behaviors to work toward organisational goals					
17	Advocates having trust in colleagues' decisions toward organizational interests					
18	Facilitates attendance of employees in workshops and symposia					
19	Organizes job skills training courses or formal training programs					
20	Creates opportunities for informal individual development or self-learning					
21	Facilitates experiential learning to gain knowledge					
22	Reward good achievements of professional activities					
23	Incentifies its employees monetary wise					
24	Incentifies its employees with non-monetary trait (promotion opportunities)					
25	Promotes effective use of internal communication channels					
26	Encourages the effective use of external communication channels					
27	Lay emphasis on the use of information technology system to share experience and knowledge about work					
28	Lay emphasis on the use of information technology system for management activities					
29	Is satisfied with only employees with good professional competencies					
30	Promotes employees' fast adaptation to changes of working environment					
31	Promotes employees' good ability of communication					

SECTION C: ORGANISATIONAL PERFORMANCE

The following are the identified performance measures in project-based firms. Kindly tick as appropriate, with regards to what has been recorded in the past and in comparison with competitors, the extent to which you agree on your firm's performance based on a numbered scale of 1 to 5 where, 1= Strongly Disagree, 2= Disagree, 3= Somewhat Agree, 4= Agree and 5= Strongly Agree.

S/N	ORGANISATIONAL PERFORMANCE MEASURES	1	2	3	4	5
1	My firm has a record of consistent increase in annual turnover					
2	The ratio of profit before tax to total revenue (i.e. profit margin) of the firm is said to be progressive					
3	Clients review of service(s) rendered has gained the firm more clients					
4	The percentage of the repeated clients to total number of clients the firm has is high					
5	Employees are eager to leave the firm for other firms					
6	There has been an upsurge in the firm's ratio of work volume to total volume of work in the industry					
7	The firm has experienced consistent improvement in employee's professional skills					
8	The firm's reputation in construction market has increased					