

**ASSESSMENT OF TRADITIONAL PROCUREMENT  
SYSTEM IN NIGERIA: KEY CHALLENGES AND  
PROPOSED SOLUTIONS**

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**ASSESSMENT OF TRADITIONAL PROCUREMENT SYSTEM IN  
NIGERIA: KEY CHALLENGES AND PROPOSED SOLUTIONS.**

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A Thesis submitted in partial  
fulfillment of the requirement for the award of the  
Degree of Master in Construction Technology Management

Faculty of Technology Management and Business  
University Tun Hussein Onn Malaysia

**SEPTEMBER, 2015**

## **DEDICATION**

To my late mother, my father, my uncle, Bappa Danladi and to my late bothers and close friends: Nuraddeen Al-Mustapha and Abdullahi Danladi.

Thanks be to Almighty Allah.

## ACKNOWLEDGMENT

All praise be Allah the most High, the provider of opportunities to all creatures. I thank Him for giving me the opportunity to accomplish my Master project report writings and other curricula programs at the University Tun Hussein Onn Malaysia. I sincerely appreciate the efforts of my supervisor Dr. Md Asrul Nasid Masrom for dedicating his time tirelessly, correcting the mistakes and strengthened the quality of the research. Also, worthy of appreciation are my two examiners Dr.Norphadzlihatun Manap and Dr.Sulzakimin HJ Mohammed for their remarkable observation, correction and contribution to this research. On the other hand, I am appreciating the efforts of all my lecturers of Construction Technology Management and Business, May Almighty Allah continue to bless them and guide them in all their endeavors. I would also like to show my appreciation to all academic and non-academic staffs of Faculty of Technology Management and Business.

My appreciations also go to my colleagues, my senior colleagues and friends that assisted me in one way or another during my studies especially Mal. Bala Yushau (Phd-in-view), Mal. Hamza Usman, Mal. Abdulaziz Umar Raji (Phd-in-view), Shahid Muhammad Hanif, Mal. Isa Abdullah (Zaria), Mal. Mohammed Ishaq, Musa Mohammed Mukhtar (Phd-in-view), Mal. Musa I. Mohammed, Engr. Abubakar A Malala and Mal. Abdulkadir Adamu. My special regards also goes to Alh. Auwal Ibrahim, Usman Mohammed Gidado, Alh. Umar Mohammed Godado (Sarkin Shanu Gombe), Arc.Usman Muktar Wali, Alh. Kabiru Ahmad, Arc. Aminu Mohammed Adamu, Mohammed Garba (FTHG), Alh. Babangida Garba Shinga, Alh. Aliyu Umar El-Narpaty (Ubandoma), Abubakar Danladi and Bappa Danladi. They have assisted me throughout this programme with tremendous help. In this juncture, I would like to express my happiness to my employer, staff and colleagues of Federal College of Education Technical Gombe, for tremendous assistance given to me. May Allah uplift and bless all.

Finally, I hereby appreciate the patience and prayers rendered to me by my beloved wife and children; I am eternally grateful for their infinite loves and affections they are showing to me. I would like to appreciate the effort of all my relatives, brothers, sisters and friends for their special prayer for my success. May Allah bless you. Thank you all.

## ABSTRACT

Traditional procurement system is commonly used in Nigerian construction industry. However; despite the wide choice of other procurement system, there are numerous of key challenges that affects cost, time and quality of completed project. This challenge contributes negatively to both parties namely clients and contractor. To date, there are limited works that assess the key challenges of traditional procurement system in Nigeria which hinders the proposition of possible solutions to the problems. Hence, this research aims to identify the key challenges that are associated with traditional procurement in Nigerian construction industry with a view to identify areas of weakness and propose a solution. It also involves identification of the most frequent use of traditional procurement system. Structured questionnaire was distributed to 136 contractors that actively participated in the construction industry with 78 percent response rate. The use of mean, ranking, correlation and analysis of variance were used to analyses the data. The result shows that all the challenges have a significant relationship with the open tendering method. Further analysis also show that all the key challenges: Cost certainty, Time certainty, Build ability and Fragmentation of organizational interface have a significant relationship with one another. All the formulated solutions such as creation of unified project team, improvement in line of communication, early participation of contractor in design stage were found to be related to all the individual challenges and are therefore, suitable in overcoming all the key challenges.

## ABSTRAK

Sistem perolehan tradisional biasanya digunakan dalam industri pembinaan Nigeria. Walau bagaimanapun; walaupun terdapat pelbagai pilihan sistem perolehan yang lain, terdapat banyak cabaran utama yang memberi kesan kepada kos, masa dan kualiti projek selesai. Cabaran ini menyumbang secara negatif kepada kedua-dua pihak iaitu pelanggan dan kontraktor. Setakat ini, terdapat kerja-kerja terhad yang menilai cabaran utama sistem perolehan tradisional di Nigeria yang menghalang cadangan penyelesaian yang mungkin kepada masalah. Oleh itu, kajian ini bertujuan untuk mengenal pasti cabaran-cabaran utama yang berkaitan dengan perolehan tradisional dalam industri pembinaan Nigeria dengan tujuan untuk mengenal pasti bidang kelemahan dan mencadangkan penyelesaian. Ia juga melibatkan pengenalan penggunaan yang paling kerap sistem oleh perolehan tradisional. Soal selidik berstruktur telah diedarkan kepada 136 kontraktor yang mengambil bahagian secara aktif dalam industri pembinaan dengan 78 peratus tindak balas. Penggunaan min ranking, korelasi dan analisis varians telah digunakan untuk menganalisis data. Hasil kajian menunjukkan bahawa semua cabaran yang mempunyai hubungan yang signifikan dengan kaedah tender terbuka. Analisis selanjutnya juga menunjukkan bahawa semua cabaran utama: kepastian kos, kepastian masa, membina keupayaan dan perpecahan antara permukaan organisasi mempunyai hubungan yang signifikan dengan satu sama lain. Semua penyelesaian yang digubal seperti mewujudkan pasukan projek bersepadu, peningkatan komunikasi, dalam talian penyertaan awal kontraktor dalam peringkat reka bentuk telah didapati berkaitan dengan semua cabaran individu dan oleh itu, sesuai dalam mengatasi segala cabaran utama.

**TABLE OF CONTENTS**

<b>TITLE PAGE</b>	<b>i</b>
<b>DECLARATION</b>	<b>ii</b>
<b>DEDICATION</b>	<b>iii</b>
<b>ACKNOWLEDGEMENT</b>	<b>iv</b>
<b>ABSTRACT</b>	<b>vi</b>
<b>TABLE OF CONTENTS</b>	<b>viii</b>
<b>LIST OF TABLES</b>	<b>xiv</b>
<b>LIST OF FIGURES</b>	<b>xvi</b>
<b>LIST OF APPENDICES</b>	<b>xiv</b>
<b>CHAPTER 1 INTRODUCTION</b>	<b>1</b>
1.1 Introduction	1
1.2 Background of the Research	1
1.3 Problem Statement	3
1.4 Research Question	5
1.5 Aim and Objectives of the Research	5
1.6 Significance of Research	5
1.7 Scope of Research	6
1.8 Summary	8
<b>CHAPTER 2 LITERATURE REVIEW</b>	<b>9</b>
2.1 Introduction	9



2.2	Definition of procurement method	9
2.3	Types of procurement methods	12
2.3.1	Design and Build procurement method (integrated)	13
2.3.1.1	Types of Design and Build	16
2.3.1.2	Advantage of design and build	17
2.3.1.3	Disadvantage of design and build	17
2.3.2	Management procurement method (packaged)	17
2.3.2.1	Management contracting	18
2.3.2.2	Construction management	20
2.3.2.3	Advantage of management procurement method	21
2.3.2.4	Disadvantage of management procurement method	21
2.3.3	Traditional procurement system (Separated)	21
2.3.3.1	Fixed price contract Method	28
2.3.3.2	Measurement contract method	29
2.3.3.3	Cost reimbursement contract method	30
2.3.3.4	Type of various selection method of traditional procurement process	32
2.3.3.5	Advantage of Traditional procurement Method	34
2.3.3.6	Disadvantage of Traditional procurement method	35

2.4	Challenges of Traditional Procurement system	
	application	34
2.4.1	Time certainty challenges	41
2.4.2	Cost certainty challenges	41
2.4.3	Buildability challenges	42
2.4.4	Fragmentation of organizational interface	42
2.5	Solutions to overcome various key challenges	43
2.5.1	Communication	43
2.5.2	Design and specification	44
2.5.3	Possession of construction site	44
2.5.4	Kick back	44
2.5.6	Use of skill labour	45
2.5.7	Project team	45
2.5.8	Collaboration between contractor and subcontractor	46
2.5.9	Early participation of contractor in design stage	47
2.5.10	Frequent changes in design and specification	47
2.6	Theoretical Framework	49
2.7	Summary	49
<b>CHAPTER 3</b>	<b>RESEARCH METHODOLOGY</b>	<b>50</b>
3.1	Introduction	50
3.2	Research approach	52
3.3	Research design	52
3.4	Research Population, sample and sampling technique	53
3.4.1	Population	53

3.4.2	Sample and Sampling technique	53
3.5	Method of data collection	55
3.5.1	Sources of data	55
3.5.2	Instrument of data collection	56
3.5.2.1	Questionnaire development	57
3.5.2.2	Likert scale	57
3.6	Pilot test	58
3.7	Data Analysis	59
3.8	Summary	60
<b>CHAPTER 4</b>	<b>DATA PRESENTATION AND ANALYSIS</b>	<b>61</b>
4.1	Introduction	61
4.2	Questionnaire distribution	62
4.3	Data Reliability and Normality	62
4.4	Respondents' Profile	63
4.5	Selection methods in traditional procurement system	66
4.5.1	Discussion of result	67
4.6	Challenges of traditional procurement system	67
4.6.1	Cost uncertainty	68
4.6.1.1	Relationship between cost uncertainty	
	Challenges	69
4.6.1.2	Discussion of result	69
4.6.2	Time uncertainty	70
4.6.2.1	Relationship between time uncertainty	
	Challenges	71

4.6.2.2	Discussion of result	71
4.6.3	Buildability challenge	72
4.6.3.1	Relationship between buildability Challenges	73
4.6.3.2	Discussion of result	74
4.6.4	Fragmentation of organizational interface challenge	74
4.6.4.1	Relationship between fragmentation of organizational interface challenges	75
4.6.4.2	Discussion of result	76
4.6.5	Aggregate challenges of traditional procurement system	76
4.6.5.1	Discussion of result	80
4.7	Relationship between challenges and selection criteria of traditional procurement system	80
4.7.1	Discussion of Result	82
4.8	Proposed solutions to the challenges of traditional procurement system	82
4.8.1	Relationship between solutions and challenges of traditional procurement system	84
4.8.1.1	Discussion of result	85
4.9	Overall discussion of result	87
4.10	Summary	88
<b>CHAPTER 5</b>	<b>CONCLUSION AND RECOMMENDATION</b>	<b>89</b>
5.1	Introduction	89

5.2	Summary of project findings	89
5.3	Contributions	91
5.4	Limitation of the research	92
5.5	Recommendation	92
5.5.1	Recommendation on Most frequent used methods of traditional procurement system in Nigerian construction industry	92
5.5.2	Recommendation on the challenges of traditional procurement system in Nigerian construction industry	93
5.5.3	Recommendation on the proposed ways to overcome the various challenges of traditional procurement system in the Nigerian construction industry	94
5.6	Conclusion	96
	<b>REFERENCES</b>	<b>97</b>
	<b>APPENDICES</b>	<b>112</b>

## LIST OF TABLES

2.1	Definitions of Procurement method	11
2.2	Definitions of Design and build Procurement method	14
2.3	Definitions of Traditional Procurement method	24
2.4	Different Traditional method in use	31
2.5	Challenges of Traditional procurement system application in developing countries	37
2.6	Challenges of Traditional procurement system application in developed countries	40
3.1	Determining size from a given population	55
3.2	Method of answering research questions	56
3.3	Method of data analysis	59
4.1	Questionnaire distribution	62
4.2	Reliability test	62
4.3	Respondents' Position in the company	63
4.4	Professional background of the respondents	64
4.5	Respondents' duration in construction industry	64
4.6	Company's main activity	65
4.7	Value of projects executed in the last 2 years	65
4.8	Selection Methods	66
4.9	Cost uncertainty	68
4.10	Correlates of cost uncertainty challenges	69

4.11	Time uncertainty	70
4.12	correlates of time uncertainty challenges	71
4.13	Buildability	72
4.14	Correlates of buildability challenge	73
4.15	Fragmentation of organizational interface	74
4.16	Correlates of fragmentation of organizational interface challenges	75
4.17	Challenges of traditional procurement system	77
4.18	Aggregated challenges of traditional procurement system	78
4.19	Correlates of challenges of traditional procurement system	79
4.20	Correlates of challenges and selection criteria of traditional procurement system	81
4.21	Solutions for overcoming challenges of traditional procurement systems	83
2.22	Correlates of challenges and solutions of traditional procurement system	84

**LIST OF FIGURES**

1.1	Organization of Chapters	7
2.1	Design and Build Contractor	15
2.2	Management Contracts	19
2.3	Construction Management	20
2.4	Traditional procurement method	27
2.5	Theoretical framework for solving key challenges in traditional procurement system	49
3.1	Research Process	51



**LIST OF APPENDICES**

A	Draft questionnaire	112
B	Descriptive statistics	118
C	Reliability test	120
D	Pilot test	126

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

This section discusses on the introduction of the research that serves as the background. Problem statement, research questions, aim and objectives, significant of research and scope of the research are also discussed in this chapter. The last part of the chapter outlines the organization of chapters.

#### **1.2 Background of the Research**

The state of the construction industry of a country signals the direction of development in a country. This is because the industry is responsible for the provision of infrastructure and contribution to the gross domestic product of the country (Dada, 2013). Physical and infrastructural development is tied to the industry. The industry is responsible for the provision of shelter, buildings and other infrastructure that adds to, or supports the quality of life of the citizenry.

The construction industry is the backbone of many countries. According to Giang *et al.* (2011), the construction industry is an important sector of the economy

which makes a significant contribution to gross domestic product (GDP), capital formation, and employment; and has backward and forward linkage effects with several other sectors. Construction produces the nation's physical infrastructure and other productive assets; the industry is of critical importance in the national development of developing countries (Giang *et al.*, 2011). Whichever procurement system is used to procure projects, infrastructure development remains the most important tool to a national development (Dada, 2012).

According to Noor *et al.*, (2013) in most of developing countries, the construction activity is dominated by infrastructure, and that value added in construction accounts for only 3-7 percent of GDP, the total value of new construction work represents anything between 45 and 65 percent of gross domestic capital formation. Wong *et al.* (2008) found that the proportion of civil engineering works in the total construction output of developing countries was higher than that in their industrialized counterparts. Miller *et al.* (2009) observed that the mix of construction demand (and output) changes as an economy develops. Developing countries need to embark on extensive infrastructure provision in order to achieve and sustain economic growth and aspire towards the standards of the developed economies (Kirkpatrick *et al.*, 2006).

From the above discussion it shows that construction is of great importance in economic development and there is a need for understanding of procurement practices in developing countries for better implementation of projects (Noor *et al.*, 2013). Procurement is critical as it determines the overall framework embracing the structure of responsibilities and authorities for participants within the building process. Therefore, it is a key factor contributing to project success. (Noor *et al.*, 2013)

In any contracts, obtaining a project within a predefined time, cost and quality is the ultimate goal of the clients in construction industry (Ballard, 2008). The procurement system is the key through which the clients creates precondition for a successful achievement of projects specified objectives.

Davis *et al.* (2013) state that in traditional procurement system, the employer accepts that design work will be generally separate from construction; consultants are appointed for design and cost control, and the contractor is responsible for carrying out the works. This responsibility extends to all workmanship and materials and

includes all work by subcontractors and suppliers. The contractor is usually appointed by open competitive tendering. The contractor can as well be appointed by negotiation (Cooke *et al.*, 2013).

According to Kwak *et al.* (2009), the traditional contract procurement has been widely criticised because it is considered as an ineffective procurement method involving time and cost overrun on construction projects. Despite these criticisms, the stakeholders seem reluctant to adopt new method and the system. For instance, like in many developing countries, is still being widely used in Nigerian construction industry (Babatunde *et al.*, 2010). The reasons for the system's continuance are obvious to many observers:

The traditional system is sequential in nature and the main advantages are:

- i. It provides accountability due to open competitive tendering for selection of prequalified contractors.
- ii. It allows a client to make needed changes during the design stage which are less costly than during construction stage.
- iii. It allows price to be fixed in advance of constructions thereby allowing client to have prior knowledge of his commitment.

Meanwhile, the traditional practice also has some disadvantage, including that it will lead to a more time taken to finish up the projects period and eventually affects the overall cost of the project.

### **1.3 Problem Statement**

Any procurement system that lead to a successful project delivery are measured based on cost, time and quality performance (Eriksson *et al.*, 2011). The aim of every client is to have the project completed at the right time, with high quality and within an agreed budget. According to Babatunde *et al.* (2010), the emphasis of procurement methods is on optimizing all the parameters involved in project delivery. One of the procurement method used to achieve the above is the traditional procurement system, which is a widely used system in the Nigerian construction industry.

Different studies on procurement methods have confirmed the dominance of the traditional procurement method in the construction industry. Recent studies of

Babatude *et al.* (2010) as well as Dada (2012), all acknowledge this phenomenon in construction projects in Nigeria. This procurement method is on the increase by public sector which is the largest employer of construction industry (Ujaddughe *et al.*, 2010). Dada (2012) also indicates that traditional procurement method has been reported for use in project delivery in many countries of the World in which Nigeria is one.

Although about 75% of public construction is procured through traditional procurement system in Nigeria, “projects procured usually experience some form of cost overrun, delay in completion time and low quality at completion” (Olatunji *et al.*, 2013). Cost certainty only exists at the beginning stage of the project. No one actually knows the final construction cost until the project is completed (Kerzner *et al.*, 2013). On the issue of quality, clients are generally not satisfied with building designs which do not provide value for money in terms of quality (Quinn *et al.*, 2013). Under this system, the contractor’s input into the design process is minimal and therefore; the opportunity to incorporate build-ability into the design is largely lost and clients do not get the best possible quality desired (Kirkham, 2013).

In addition, delay in project completion is another problem bedeviling Nigerian construction industry. No one is certain that the project will be completed on the date which was agreed upon by the parties when signing the contract (Cooke & Williams 2013). Criticism arises when project run longer than planned and legal disputes always arises over how much responsibility each party is willing to take over the delay (Kong & Gray 2012). Most of the construction projects procured by traditional methods experience some form of delay in completion (Ogunsemi *et al.*, 2006).

However, despite these criticisms on traditional procurement system there are limited empirical researches that ascertain the challenges of the system. Accordingly, this project strived to find out the challenges of traditional procurement system application in Nigerian construction industry.

#### **1.4 Research Question**

This research work answers three questions, which invariably assist in achieving its objectives. The questions are:

- i. What are the various methods of traditional procurement system used in Nigeria?
- ii. What are the various challenges of traditional procurement system application faced by the Nigerian contractor?
- iii. How can the various challenges of traditional procurement system in the Nigerian construction industry be overcome?

#### **1.5 Aim and Objectives of the Research**

The aim of this research is to investigate the challenges of traditional procurement system application in Nigerian construction industry with a view to identify areas of weakness and propose a solution. This can be achieved through the following objectives:

- i. To identify the most frequent used methods of traditional procurement system in Nigerian construction industry.
- ii. To identify the challenges of traditional procurement system in Nigerian construction industry.
- iii. To proposed ways to overcome the various challenges of traditional procurement system in the Nigerian construction industry.

#### **1.6 Significance of Research**

Identifying constraints associated with traditional procurement system application is important to the industry in the following regards:

- i. To client: Identifying areas that affects quality in construction would ensure good workmanship and high quality of any completed work. This would go a long way to preventing building collapse and safeguard people's live. It would also ensure that the tax payers, who are the people themselves, get value for their money.

- ii. To contractors: completing project within cost, time and stated quality adds to the contractor's reputation in a great way. When contractor completed project within a minimum time possible, the margin of his expected profit usually increases- because 'time', they say is 'money'. Also, the contractor usually gets the value of his retained amount in full at the end of any defects liability period for a successful completed work that was found to be in good condition. It also prevents the cases of abandon projects.
- iii. To the economy: the economy of any nation tends to be more realistic when there is cost and time certainty. If a government is sure of getting a commodity within a particular cost and given time, it can be easily budgeted for and pursue it with high vigor and certainty. Also the quality obtain of any completed project determines whether the economy can benefit from such a project for a long time or not. By getting a quality work of any completed project, the economy can save the money that would have been otherwise channel for maintenance work.
- iv. To the Policy: by identifying the problems and solution associated with traditional procurement system application, the government can come up with a good policy and laid down criteria that can ensure that all work to be procured in the future follows a stated guideline to ensure that cost quality and time are maintained.
- v. To the Academic: The findings and recommendation of this research project will add to a pool of academic knowledge and for future research.

## **1.7 Scope of Research**

The studies:

- i. Area scope: Due to limitation of cost and time, the study will consider only construction projects in Gombe metropolis Nigeria where a significant number of public construction activities are sited and ongoing in the region because of its strategic central location to other neighboring state.
- ii. Respondent scope: the target respondents are contractors. The contractor undertakes the direct physical construction of the facility understands the direct physical construction process in detail (Radosvljevic & Bennett, 2012).

- iii. The concept scope: within the various types of procurement system, the study would cover only traditional procurement system using a widely used measurement forms of contract.

## 1.8 Organisational structure of the research

This research work is structured into five (5) chapters. Details and specific explanation to every section will be discussed below as shown in figure 1.1:

Chapter 1: This is the main introduction of the research topic. It comprises the background of research, the research problem, research questions, research aim and objectives, scope, and significance of research. Finally, the organization of the chapters and summary follows.

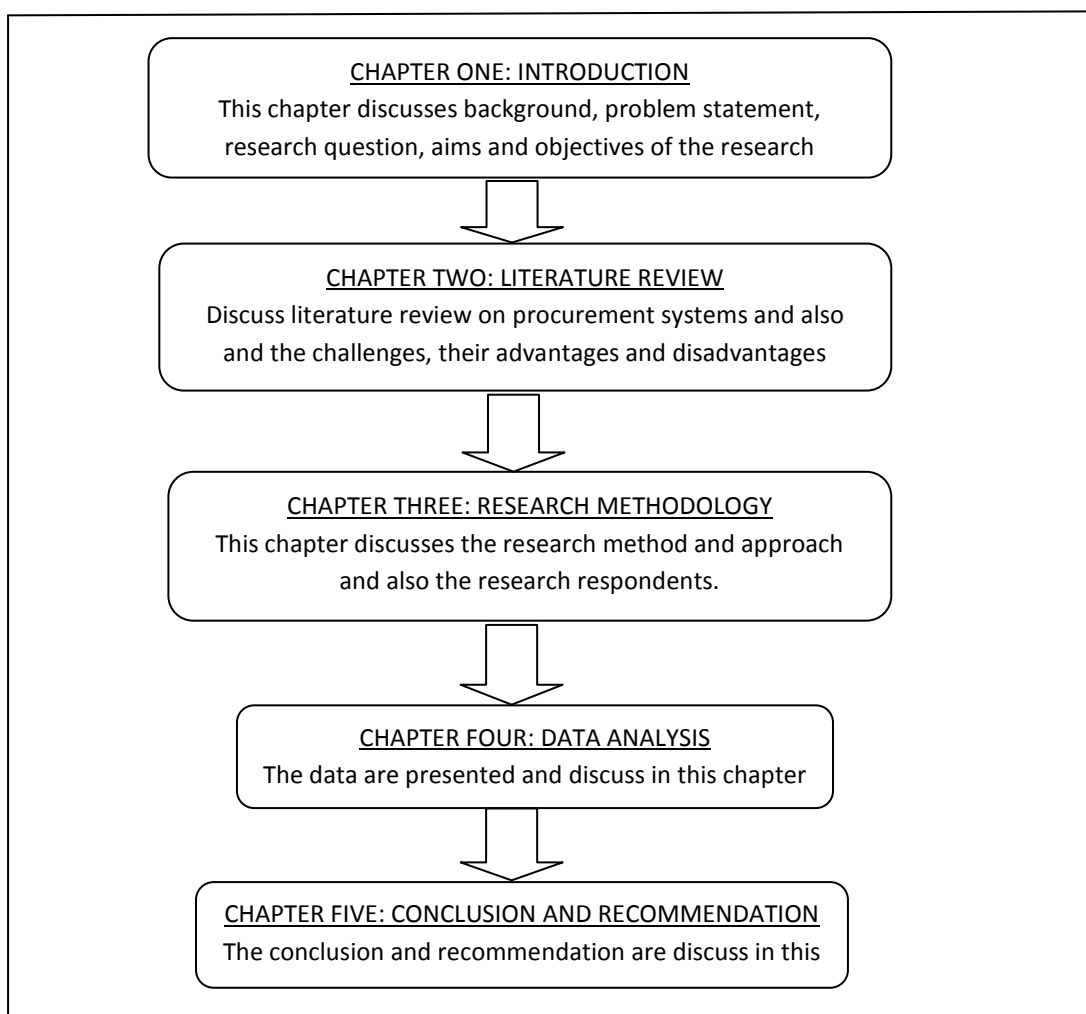


Figure1.1: Organisation of Chapters



Chapter 2: Literature review looks at the previous writing researches within the scope. It looks at the problems/effects of traditional procurement system application in Nigerian Construction industry. The chapter focuses on different procurement system available in Nigeria with more emphasis to traditional procurement system and its application in Nigeria. Identify any research gaps that have not been discussed by previous researchers or need to be discussed further. The chapter focuses on various method of traditional procurement system, the different problems/effects of traditional system application.

Chapter 3: Chapter three discusses the research approach and strategies and research procedures that have been adopted in conducting the research. This includes research process and design, population and sampling techniques used. The instrument used in data collection and analysis of data were developed.

Chapter 4: This chapter presents the data and analysis. It also discusses the result of survey and findings. It further discusses the main results of the analysis. The discussion answers the research questions and formed the basis of recommendations.

Chapter 5: The last chapter in the research summaries the complete research work conducted. The conclusion gives recommendation for possible future research.

## **1.9 Summary**

In summary, the introduction of the research subject matter is provided in this chapter. The introduction made up of the background of the research work, the problem statement, which establishes the basis for the research work. The research question, the research aim and objectives, the significant of the research and also the scope of the research were fully explained herein.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In the previous chapter, the overview of this study is explained and the problem is identified. This chapter discusses previous researches intensively on procurement system, various types and problems and challenges of traditional procurement system application in the Nigerian construction industry. The overview of the previous researches on the subject matter justifies the way research questions are to be answered. Throughout the chapter, the elaborations of the topic are clearly described. The literature reviews the relevant subject matter from books, journal, articles, and other available documents related to this research work.

To achieve the success of the research, an intensive literature review is needed, which was collected from previous scholars' write up on the particular subject matter. According to Chua (2006) literature review is an important tool of the research methodology that helps measure any research.

#### **2.2 Definition of procurement method**

The term procurement method refers to the owner's approach to organizing the project team that will manage the entire design and construction process (Wardani *et*

*al.*, 2006). It is the process where client who wishes to renovate, extend or construct a new building require the services of many construction-related organizations to achieve the desired end product (Othman & Ahmed, 2011).

According to Othman & Harinarain (2011), the term 'procurement' here is defined as the overall process of acquiring a building. Adenuga *et al.*(2012) define procurement as the overall method used by a client/or representatives so as to arrive at a tender figure and other operation towards the selection of a contractor to deliver a project at an agreed time and conditions.

According to Dada (2013), the procurement process is also concerned with the form of procurement whether by contract or direct labour, and with the quality of delivery of both the work carried out and the level of service provided.

Procurement methods for construction industry can be defined as the organizational structure adopted by client for the management of the design and construction of a building project (Baiden *et al.*, 2006). However, procurement methods define the management, functional and contractual arrangement and relationship amongst project team.

Gerge *et al.* (2012) stated that procurement method is a contemporary term, which is known to many practitioners and researchers of the construction industry by different terms; these include terms such as project approach, procurement systems, procurement delivery methods or project delivery systems.

Procurement process is an organizational structure adopted by the client for the implementation and at times eventual operation of a project (Kelly et al., 2014). It is a key means through which the clients create the pre-conditions for the successful achievement of project-specific objectives (Mathonsi *et al.*, 2012).

A procurement method is an organizational system that assigns specific responsibilities and authorities to people and organizations, and defines the various elements in the construction of a project (Ghahramanzadeh, 2013). Different procurement methods are used for different construction projects and the correct choice may help to avoid problems and be the key to the attainment of project specific goals. The choice of procurement process is govern to a large extend by the risk and owners desire to find a method that will deliver the project on time, budget and in a form that will meet the owners need most effectively. According to Ng &

Chen (2012), the selection of an appropriate procurement system depends largely on the accurate identification of client requirements.

There are a number of alternative procurement methods a client may use to acquire these services. These procurement methods give the client a choice of various management structures, different contractual arrangements and varying degrees of client risk.

From the above definitions provided by various scholars, their respective contribution is provided in Table 2.1 below and discuss earlier. All their respective definition discusses clients-process-product; the means through which clients satisfy his own needs to achieve a specific objective.

Table 2.1: Definitions of Procurement method

No	Author	Year	Definition
1	Baiden <i>et al.</i>	2006	Organizational structure adopted by client for the management of the design and construction of a building project.
2	Wardani <i>et al.</i>	2006	Refers to the owner's approach to organizing the project team that will manage the entire design and construction process.
3	Othman & Ahmed	2011	The process where client who wishes to renovate, extend or construct a new building require the services of many construction-related organizations to achieve the desired end product.
4	Othman & Harinarain	2011	The overall process of acquiring a building.
5	Adenuga <i>et al.</i>	2012	Procurement is the overall method used by a client/or representatives so as to arrive at a tender figure and other operation towards the selection of a contractor to deliver a project at an agreed time and conditions.
6	Gerge <i>et al.</i>	2012	Procurement method is a contemporary term such as project approach, procurement systems, procurement delivery methods or project delivery systems.
7	Mathonsi <i>et al.</i> ,	2012	It is a key means through which the clients create the pre-conditions for the successful achievement of project-specific objectives.

**Table 2.1** Definitions of Procurement method (Cont'd)

No	Author	Year	Definition
8	Dada	2013	The procurement process is also concerned with the form of procurement whether by contract or direct labor, and with the quality of delivery of both the work carried out and the level of service provided.
9	Ghahramanzadeh,	2013	Is an organizational system that assigns specific responsibilities and authorities to people and organizations, and defines the various elements in the construction of a project?
10	Kelly et al.,	2014	Procurement process is an organizational structure adopted by the client for the implementation and at times eventual operation of a project.

### 2.3 Types of procurement methods

Different types of procurement methods are available to meet the needs of the clients (Davis *et al.*, 2008). The decision as to what procurement method to use should be made as early as possible.

The common procurement method found in Nigeria is classified as follows:

- i. Design and build (Integrated) procurement method;
- ii. Management (Packaged) procurement Method
- iii. Traditional (Separated) procurement method

### 2.3.1 Design and Build procurement method (integrated)

Design and build procurement method is an arrangement where one contracting organization takes sole responsibility for the design and construction of client's project-usually for a lump sum (Ojo *et al.* 2012). It is an arrangement of a single point responsibility in which contractor accepts total responsibilities for all function-design, documentation and construction of a project except financing function in return for a lump sum price.

A design and build contract is one in which a single entity, usually a contractor assumes responsibility for the design in whole or in part and for the construction and completion of a construction project (Awodele, 2012). According to Senge (2014), this is the method where one organization, usually but not exclusively the contractor, takes responsibility for the design and construction of the project. The clients deal with only one organization. Davis *et al.*, (2008) stated that design and construct procurement method, a contractor accepts responsibility for some or all the design.

Design and build is the process where the clients deals directly with the contractor for the complete building and it is the contractor who, is not only responsible for but also, coordinate the separation of the design and construction process, including engagement of the design team who are contractually linked with the contractor and not the clients (Eed, 2012).

Design and build contracts place one point responsibility for everything for the design and construction in the hand of the contractor. A single contractors works under a single contract with a clients to provide design and construction service (Cooke *et al.*, 2013).

Essentially, the contractor is responsible for the design, for the planning, organization and control of the construction and for generally satisfying the client's requirements, and offers his service for an inclusive sum. The procedure is initiated by the client or an architect on his behalf preparing his requirements in as much or as little detail as he thinks fit. These are then sent to the selection of suitable contractors each of who prepare his proposals on design, time and cost and submits with an analysis of his tender sum. Design and construct procurement methods offer certainty on the contract sum and bring benefits. The close integration of design and

construction methods and the relative freedom of the contractor to use their purchasing power and market knowledge most effectively can provide a client with a competitive price (Boelhouwer *et al.*, 2010).

With design and construct procurement method, it is possible to ensure a quicker start on site, and the close integration of design and construction can result in more effective programming. Time, however, is needed by the client's consultants to prepare an adequate set of requirements, and time is needed to compare and evaluate the schemes from competing tenders. The clients has control over the design element included as part of his requirement, but, once the contract is let, may not have a direct control over the development of the contractor's detail design. Any changes by the client can prove costly (Cooke *et al.*, 2013).

Table 2.2: Definitions of Design and build Procurement method

No	Author	Year	Definition
1.	Davis <i>et al.</i>	2008	Stated that design and construct procurement method, <b>a contractor accepts responsibility for some or all the design.</b>
2.	Ojo et al.	2012	Define the design and construct procurement method as "An arrangement where <b>one contracting organization</b> takes sole responsibility for the design and construction of client's project-usually for a lump sum"
3.	Awodele	2012	A design and build contract is one in which <b>a single entity</b> , usually a contractor assumes responsibility for the design in whole or in part and for the construction and completion of a construction project.
4.	Senge	2014	This is the method where <b>one organization</b> , usually but not exclusively the contractor, takes responsibility for the design and construction of the project. The clients deal with only one organization
5.	Eed	2012	Design and build is the process where the clients <b>deal directly with the contractor</b> for the complete building and it is the contractor who is not only responsible for but also coordinates the separation of the design and construction process, including engagement of the design team who are contractually linked with the contractor and not the clients.
6	Cook <i>et al.</i>	2013	Design and build contracts place <b>one point responsibility for everything for the design and construction in the hand of the contractor.</b> The contractors carry out two functions of design and construct.

Table 2.2 shows the various definition of design and build concept. The whole concepts are based on a single firm performing all planning, design and construction tasks. The figure 2.1 below indicates that the contractual links exist between the clients and the contractor, the clients and each of the sub-contractor. It also between clients and each of his independent advisers

The client initiates the process by setting out functional and performance requirement. The clients entered into a contractual arrangement with a single contractor. In this agreement, the contractor agrees to provide both design and construction work for a stated amount of fee. This means that the design consultant are either directly working for the contractor, or are working with contractor in a joint style arrangement (Circo, 2006).

Also, in this contractual arrangement, the primary legal obligation of a contractor is to satisfy client's performance specification requirements. This means that the contractor is fully responsible for both faulty workmanship in construction and or, any defect in design and construction (Tsegaye, 2009).

Therefore, contractors that do not have in-house professional relative to their project design and construction may have to offer advice to the client on design adequacy, to inspect critical part of construction and to ascertain that the construction generally complies with the project design and specification (Nurhajar, 2009).

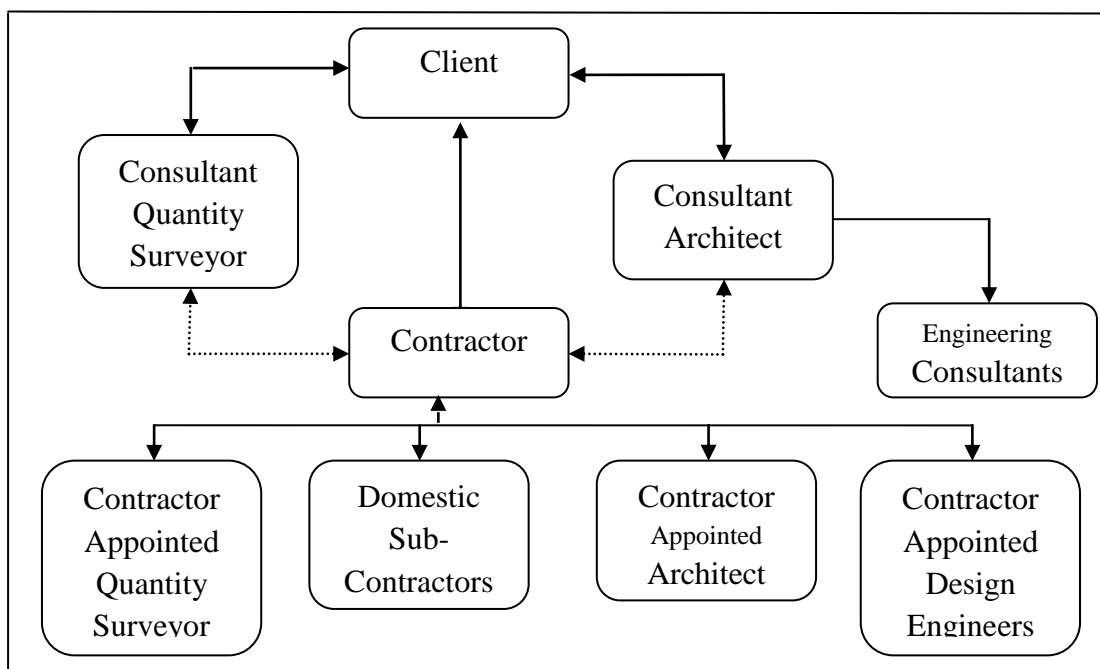


Figure 2.1: Design and Build Contractor (Ramus, 2011)



### 2.3.1.1 Types of Design and Build

According to Ling *et al.*, (2004), there are different forms of design and construct as follows:

- i. **Direct Design and build:** In this variance, no competition is obtained in tenders. Some appraisal of the possible competitors may be made before tendering but only one tender is obtained.
- ii. **Competitive Design and build:** Tenders are obtained from documents that are prepared to enable several contractors to offer competition in designs and in prices.
- iii. **Develop and construct:** Consultants design the building required to a partial stage, often referred to as 'scope design', then competitive tenders are obtained from a selected list of contractors to develop and complete the design and construct the building.
- iv. **Package deal:** This method is often used where the contractors competing will use a significant part of their own or another proprietary building system. There is limited scope for innovation when this method is used. Some contractors may offer to find site, to sell, mortgage or lease their product, obtain approvals at a risk to themselves or at charge to the client.
- v. **Novation Design and build:** This is where the contractor takes over from the client a previous contract for the design work, completes the design and constructs the work.

### 2.3.1.2 Advantage of design and build

One of the advantage of using design and build is that construction activities are undertaken by one organization. The clients deal with only one contractor who make the design and at the same time construction (Love *et al.*, 2008).

Another advantage of using this system is the issue of communication which occurs between the design team and the construction team (Nkhabu, 2011). With good and effective communication, the construction professionals are allowed to make a design input in early stage.

In addition, past experience of the design and build team is blended into current design. The clients are less involve in a direct construction. This shouldered the responsibility of complete project delivery on design and build team (Quoc *et al.*, 2010).

Under this type of procurement system, the clients may be relieve of design and construction risk burden as it gives a single point responsibility to contractor for delivering the entire projects.

### **2.3.1.3 Disadvantage of design and build**

Under this arrangement, the contract contractor is hired before design started. The clients may find out that he is not getting what he imagines he might get. Any real pricing is not possible (Goodwin, 2011). Similarly, the owner must rely heavily on the quality and ethics of the firm on any check and balance that has to do with the design (Daft, 2012). In this arrangement, the designer having work for the contractor, may not easily disclose to client any noticeable deficiency and or omission that may have a negative cost implication on his company.

According to Eriksson *et al.* (2011), Design and Build procurement should be used when a single organization is required to take responsibility and risk for the design and construction. It is a procurement routes favored by the government for publicly-funded projects, as it allows a fully integrated team to work together on the project from the beginning. It is usually adopted when a brief for scope design is likely to change and a building is functional rather than prestigious. The contractor is usually engaged to take responsibility and risk for the design and construction activities. This arrangement places all the design and construction risks on the contractor alone.

### **2.3.2 Management procurement method (packaged)**

Management procurement method is the procurement route where a client employing a professional team to advise him on design and cost issues and in addition a management consultant to advise on and supervise the construction aspect of the project (Ibrahim, 2007).

In an effort to solve the problem of the traditional method, Joint Contract Tribunal (JCT 2008) management contracting provides a contractual relationship in which a contractor alongside client appointed full professional team, who are integrated into the project design stage, to ensure early completion and quality, contribute his expertise in design and management for a fee, though responsibility for financing rest with the client. The management contractor does not directly undertake any work/trade packages by his appointed work contractors (sub-contractors). The work contractors are therefore directly and contractually accountable to management.

There are two main variation of the management fee approach as identified below:

- i. Management contracting and
- ii. Construction management

### **2.3.2.1 Management contracting**

Management contracting is a form of contractual arrangement whereby contractor is engaged and paid fee to manage the building of a project on behalf of the client. In management contracting, the contractor does none of the construction work himself but it is divided up into work packages which are let to works contractors, each of whom enters into a contract with the management contractor (Smith, 2013).

This is the method where a client appoints an independent professional team and a management contractor at pre-construction stage to advise him and during construction is responsible for construction using a direct works contracts (Potts, 2014). This method makes an early start on-site and achieves early completion. It is also flexible thereby allows a client to change the design during construction.

Management contract is based on trust and good teamwork between client, design consultant and contractor for it to be successful (Ashworth *et al.*, 2014). The contractor is appointed at pre-design stage thereby advice on the design programme, selection of suitable contractors, delivery of construction materials and construction programmes.

The management contractor will normally make a written submission of his proposed management fees, and will be appointed after interviews with the clients

and the design team. The fee will include for the total management service, expressed as a percentage of the total project cost and for service to cover preconstruction stage should the project not proceed to site (Love *et al.*, 2008). The clients usually accept most of the risk because there is no certainty about cost and programme.

The management contractor's role is to provide a construction management service on a fee basis as part of the client's management team. His role is to organise, co-ordinate, supervise and manage the construction works in cooperation with the client's other professional consultants (Ramus *et al.*, 2006).

In Nigeria, a typical use of management contracting was during petroleum trust fund (PTF) (1994-1999) as part of its mandate and responsibility to maintain roads. However; sincere construction often started before full designs. Subcontractors are often uncertain about the scope of work, hence resulting in indiscriminate delay and disputes (Ojo & Gbadebo, 2012).

In management contracting, contractual links exists between:

- i. The clients and each of the members of the design and management team.
- ii. Also, the management contractor and each of the work's contractors.

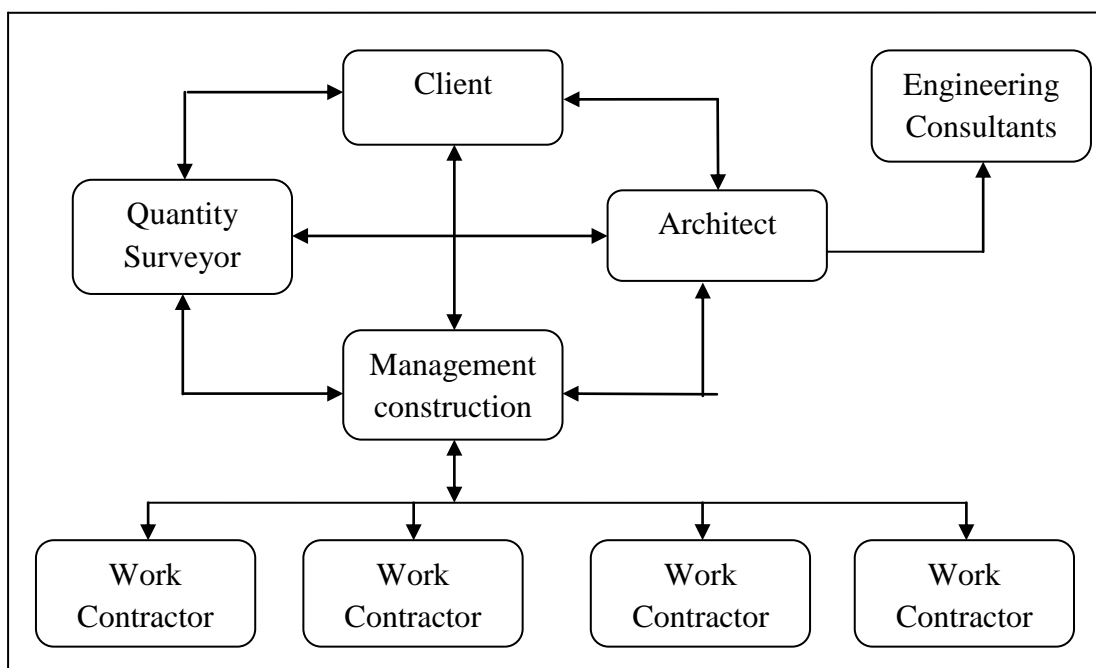


Figure 2.2: Management Contracts (Ramus, 2011)

### 2.3.2.2 Construction management

The construction management is similar to management constructing in that construction manager is responsible for organizing and planning of construction work on site and for arranging the carrying out of work in a more efficient manner (Lock, 2014). The construction work is carried out by a number of work contractors each of whom is responsible for a define trade package.

The client accepts a considerable amount of risk because works contracts are directs between the clients and the contractor. The manage contractor is acting as an agents and cannot usually guarantee that the project will be finished to time and cost.

In Construction management contract, contractual links exists between:

- i. The clients and construction manager.
- ii. The clients and each of the trade contractors.
- iii. The client and each of his professional advisers.

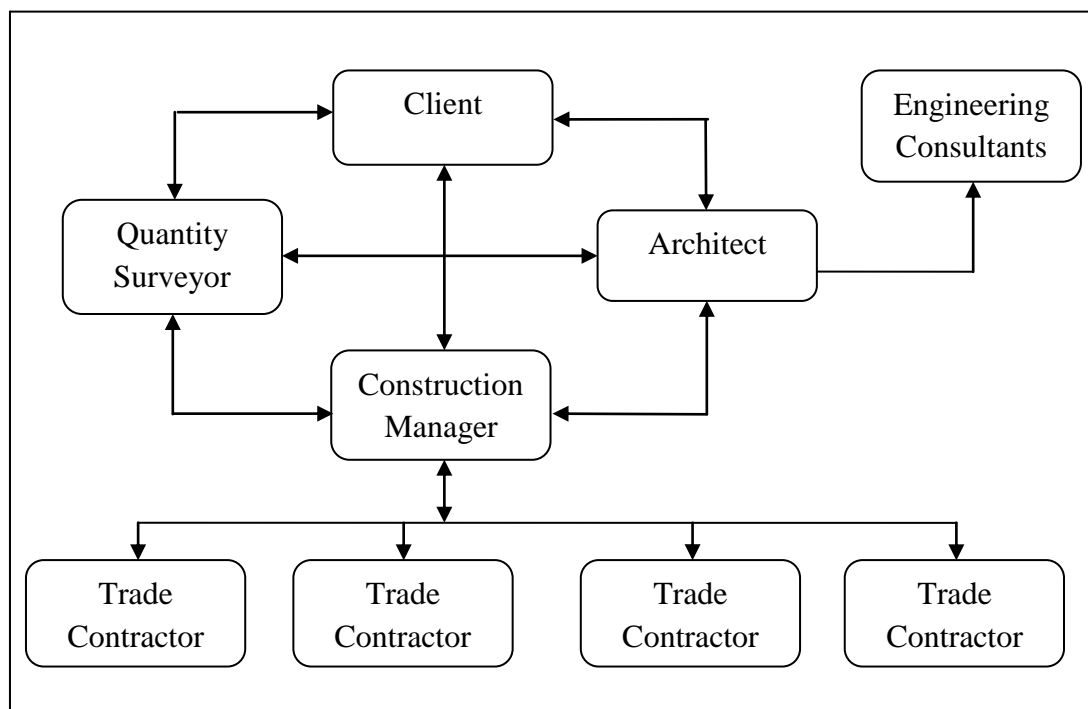


Figure 2.3: Construction Management Contracts (Ramus, 2011)

The common characteristics of management contract and construction management are that the employer pays for all the works executed directly to the trade or work contractors. The clients also have a direct contractual relationship with the trade or work contractors. In addition, the construction manager is not liable for the default of the works or trade contractor. In both cases, the construction manager merely acts as a mere consultants rather than a contractor.

#### **2.3.2.3 Advantage of management procurement method**

According to Ramus *et al.* (2011), in management procurement method, the clients are often advised on design and cost implication at the onset. All necessary measures are put in place to avoid cost overrun. Also, the clients deal with only one firm or consultant who enables improved coordination and collaboration between designers and contractors. The total time frame from brief to commissioning is reduced and also, there is an efficient cost monitoring and control. In addition, because design and construction are overlapped; there is potential for time savings for the overall project.

#### **2.3.2.4 Disadvantage of management procurement method**

According to Ramus *et al.* (2011), one of the main disadvantage of management approach to procurement is that the management contractor will require to be paid for his work if the project does not go ahead as schedule. The Clients may also lose direct control of design quality which is influenced by contractors.

The two procurement system: Design and build and management procurement system discussed above are some of the few procurement systems in place to provide alternative to the shortcomings of traditional procurement system. However, this study would focus on traditional procurement method as the basis for this research. All relevant literature would be based on traditional procurement system

### **2.3.3 Traditional procurement system (Separated)**

Traditional procurement is a method of acquiring new units of building in which a client selects an Architect and other consultants for the design of the project and later

a building contractor is also selected, who has contractual relationship with the client and executes the project to completion (Eshun, 2013). Traditional procurement system was further defined in terms of timing and responsibility under this system, design is separated from construction and each stage of the production process managed separately (Rowlison, 1999).

Onwusonye.(2005) described the traditional method as a multiplex contractual network in which an Organisation (contractor) usually outsourced using competition bidding, agreed to undertake an obligation (such as construction of a building) to specification on return for an agreed price. Usually, this involves relationship between a public or private organization (client) and another private company organization. The sole responsibility for financing of the project lies on the client organization. However, independent multi-discipline consultants on behalf of the client Organization undertake the management of the project to completion. Harper *et al.* (2005) referred traditional procurement system as competitively bid contracts where contractors are allowed to compete for projects in a free and competitive atmosphere similar to market environment.

Rashid *et al.* (2006) characterised traditional procurement system by the separation services- design, and full documentation- required before award and construction commences by the contractor (invited to tender for carrying out the work). Traditional procurement is further defined as a “design-bid-build” system of project delivery with three sequential phases: design, bid and build (Anderson & Oyetunji, 2003).

Walker & Rawlinson (2007) state that traditional procurement system has been in existence for a long time and has been the only choice available for most clients of the construction industry for many years. A system in which a client appoints a design team to provide the production information needed for the project, then select a contractor and supervise the work until completion (Kelly *et al.*, 2006)

Davis *et al.* (2013) State that in traditional approach, the employer accepts that design work will be generally separate from construction; consultants are appointed for design and cost control, and the contractor is responsible for carrying out the works. This responsibility extends to all workmanship and materials and includes all work by subcontractors and suppliers. The contractor is usually

appointed by open competitive tendering. The contractor can as well be appointed by negotiation (Cooke *et al.*, 2013).

Lengnick (1999) defined traditional procurement system as ‘Value for money’ delivery system which employs participants with different talents and combines these talents into business relationship to produce the desired results with greater certainty. He also describes the system as the free market by enabling contractors either to be selected either by open or select competition among an unlimited number of prequalified competitors.

Recent studies by Babatude *et al.* (2010) as well as Dada (2012) all documented this phenomenon in construction projects in Nigeria. In particular, Kwak *et al.* (2009) explain that clients can easily understand the operations of the Traditional procurement method in addition to their financial commitments towards their projects long before their design developments are completed. In the views of Smith *et al.* (2013), the traditional procurement method is not a suitable method for fast tracking projects because of its sequential nature that projects are designed before being constructed. This is a major disadvantage for this method of procurement as it does not support fast tracking.

The traditional procurement system remains by far the most popular method. In this arrangement, the owner first hires a design professional, who then prepares a design, including complete contract documents. The design professional is paid a fee that is either a percentage of the estimated construction cost or a lump sum amount agreed. With a complete set of documents available, the owner either conducts a competitive bid opening to obtain the lowest price from contractors to do the work or negotiates with specific contractor. The contractor is responsible for delivering the completed project in accordance with the dictates of the contract documents.

However, Babatunde *et al.* (2010) indicates that separation of design, tendering process and construction phases in Traditional procurement method should be viewed as separate tasks in which the design must be completed before construction phase starts. This study therefore, draws on this sequential feature to classify Traditional procurement method as Design-Bid-Build system. This is another nomenclature for the Traditional procurement method. Dada (2012) also indicates that Traditional procurement method has been reported for use in project delivery in many countries of the World in which Nigeria is one. Precisely, this study



confirms that Traditional procurement method has long being used by both public and private sectors of the Nigerian economy.

Table 2.3: Definitions of Traditional Procurement method

No	Author	Year	Definition
1.	Rowlison	1999	Traditional procurement system was further defined in terms of timing and responsibility under this system, design is separated from construction and each stage of the production process managed separately.
2.	Lengnick	1999	Defined traditional procurement system as ‘Value for money’ delivery system which employs participants with different talents and combines these talents into business relationship to produce the desired results with greater certainty.
3.	Bowen et al.	1999	Defined traditional procurement system bases on characteristics as: <ul style="list-style-type: none"> <li>• Project being a sequential process.</li> <li>• The design of project before construction works commences.</li> <li>• The responsibility of managing the project being divided between the client’s consultants and the contractor.</li> <li>• Reimbursement of clients consultants is normally on a fee and expenses basis whilst the contractor is paid for the work completed on lump sum</li> </ul>
4.	Anderson & Oyetunji	2003	Traditional procurement is further defined as a “design-bid-build” system of project delivery with three sequential phases: design, bid and build.
5.	Harper <i>et al.</i>	2005	Referred traditional procurement system to as competitively bid contracts where contractors are allowed to compete for projects in a free and competitive atmosphere similar to market environment.

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