KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,

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An Assessment of Procurement Procedures on Project Cost Performance: A Case Study of Cape Coast Metropolitan Assembly.

by

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MASTER OF SCIENCE

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DECLARATION

I hereby declare that this submission is my own work towards the MSc Procurement Management and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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Date

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ABSTRACT

Procurement procedure adopted hugely influences the overall cost of the project. To address such concerns, this study sought to assess the effects of procurement procedures on project cost performance in the Cape Coast Metropolitan Assembly. Using snowball sampling technique, a total 70 questionnaires were administered to management staff, finance officers, planning officers and engineers' in various departments in the assembly. 60 completed questionnaires collected from the survey were analyzed using relative importance index. The findings revealed ensuring price competition, enhances transparency and ensures accountability as the most significant impacts of procurement procedures on project cot performance. Also, design and build and two-stage procedure procurement approaches were considered by the respondents as the most important procurement procedures. The findings and recommendations of this study may be beneficial to procurement professionals and policy makers who are in search of innovative means to improve project cost performance. It is recommended that further research could be conducted on examining the relationships among the various significant procurement procedures through a structural equation modelling.

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I also thank my family and friends for their support, encouragement and continuous prayers. To my mates, I say thank you for the diverse ways of assistance you offered me.

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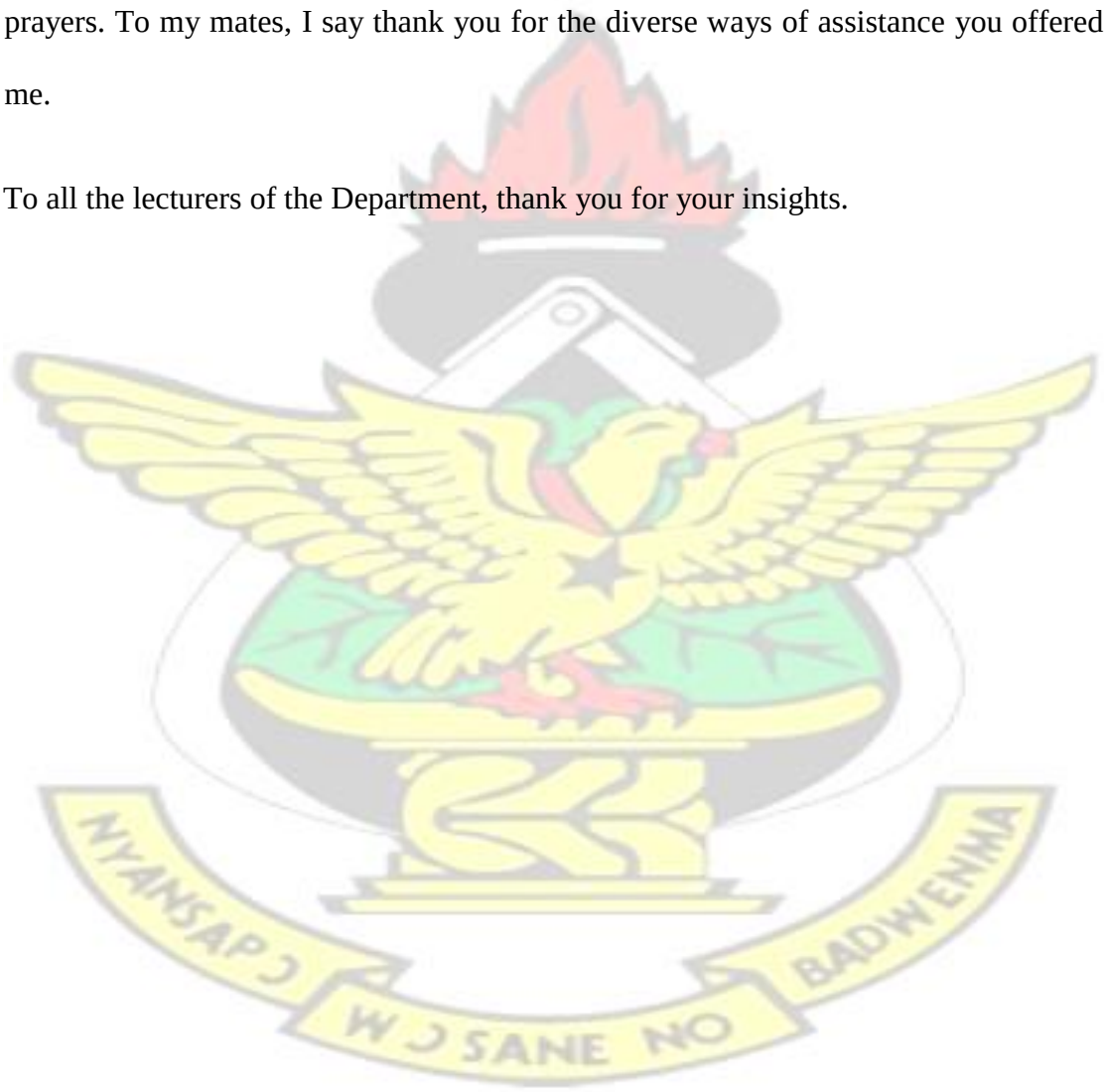

DEDICATION

I devote this work to the Lord Almighty God for his guidance, my family for their love and support and my friends for their help and encouragement.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

According to Mlinga (2009) procurement is very vital for economic development and consequently many government institutions, business organizations, policy makers and academic institutions are giving the needed responsiveness to it than ever before. In most emerging countries across the world today, procurement budgets form approximately 20% of the total expenditures of governments. Roodhooft and Abbeele (2006) contend that public institutions form the bigger purchasers as they deal with huge monetary budgets. This has resulted in governments getting on public procurement reforms and institutional framework in their procurement systems for the purpose of achieving value for money. Report from the World Bank (2003) indicates that, the Ghanaian public procurement forms approximately 24% of the total imports and aside private remunerations, public procurement forms approximately 50 to 70% of the total budget of the country and about 14% of the country's Gross Domestic Product (GDP). According to Adjei (2006), the annual value of public procurement for consultancy, goods, and works was approximately US$ 600 million which forms about 14% of the country's GDP rate.

Procurement defines the process used in acquiring services, goods and works, covering as well, acquisition from the third parties. Procurement involves critical decisions like the "make or buy" and as well option appraisal which may give rise to the provision of services and goods in apt settings (Public Procurement Act, 2003). Wardani *et al.* (2006) and Cox and Thompson (1997) highlighted that even though the procedures involved in procurement are required to be geared to improve the fulfillment of

dissimilar objectives of a project, clients however choose the various procurement procedures irrespective of the differences existing between projects (Eriksson, 2008; Laedre *et al.,* 2006). To improve on change, there is the need to increase the understanding on how dissimilar procurement procedures turn to affect varying types of project performance in dissimilar project settings. Procurement source from the word procure which refers to "acquire", "obtain by effort" and "bring about". But system as a word also refers to "organized approach, process, technique or procedure". From these two definitions, project procurement would be much concerned about an organized procedure, method, or process of acquiring or obtaining contract in construction works like road, housing, shopping mall etc. Aqua Group (2001) defines procurement as the procedure used in acquiring services, goods, and works from other party based on certain consideration. According to Masterman (1996), project procurement forms the organizational structure from which the design as well as building aspect of construction projects sourced for a particular client or customer. The introduction of many variations of project procurement system came to being as a result of the quest for speedier and efficient delivery of construction projects and an enhanced project performance.

According to Chitkara (2005), the definition of performance is "the extent to which certain effort is achieved or undertaking". This links with the assigned objectives or goals forming the parameters of the project. From the perspective of project management, all it is about is meeting or exceeding the needs as well as the expectations of stakeholders of the project which is measured on the bases of the critical project elements i.e. quality, time and cost. Project Management Institute (2004) highlighted that, in this current competitive and unpredicted business environment, all major stakeholders want faster project delivery with quick start of work of the project,

foregone conclusion of performance with regards to quality, cost and time, minimal exposure to risk, value for money on investment, and early approval of design as well as cost or price. Centre for Construction Strategic Studies (1998) affirms that even though a lot of people tend to emphasis much more on the three critical element of a project i.e. quality, time and cost, others too show concern on the project cost performance parameters. The concerns of customers or clients of projects have been up surging particularly over projects profitability and as the acceptability of the project in general. Cost overrun which relates with project delays are usually found to be one of the key factors that lead to project high cost (Bowen *et al.*, 2007). Research from time past up to date tended to emphasis on the aspect of technicalities involved in managing costs on project in meeting the objectives of the client. There exist little evidence concerning the published literature on the organizational political as well as social problems that are within the construction cost management and the aptitude in meeting the client's need in relation to cost.

1.2 PROBLEM STATEMENT

According to Kabaj (2003), a well-organized public procurement system is key to the growth of most countries in African and it is as well a substantial expression of the country's commitment to making proper use of the state resources. Similarly, Kakwezi and Nyeko (2010) argue that departments of procurement of the public bodies face the challenge of lacking sufficient information on the procedure of procurement including its resource consumption, outputs, inputs and results, and as a result fail to determine the effectiveness and the efficiency of the procurement system. With this challenge, the need for the establishment of clear procedures and performance standards of the system is of prime importance. For the performance standard when adopted can assist

decisionmakers with objective and unbiased information pertaining to cost, procurement function and procurement of projects.

Furthermore, methods or procedures of procurement provide the framework for implementation and development of projects. Much attention is paid to the establishment of effective system of procurement which will suit a specific project performance. A procurement procedure used for a particular project must meet the project's specific objectives relating to quality, cost, and time, but the situation has turned the order way for the Metropolitan Assemblies in Ghana (Kotey, 2014). Cost and time overrun has been one major challenge facing Metropolitan Assemblies in Ghana and Cape Coast Metropolitan Assembly is not excluded and many efforts that have been made so far have failed in yielding the expected outcomes. Problems established from past research works based on the use of available procurement procedures in the delivery of projects performance includes poor quality delivery, time, cost overrun etc. Also, procurement systems that are "fast-tracking" are attempted by the industry to make provision for better deal to the projects' customers, who are increasingly looking for "value for money" from their projects in relation to quality, cost and time. Other procurement systems also recommend the distinction in the organizational structure in the terms of the project in relation to authority, role, and responsibility.

Dissimilar systems of procurement have effect on the performance of the project as the procedure, method, process and organization differ across the various systems. The concerns of clients have been projects' profitability and the acceptability of the project in general. Cost overrun which relates with the delays in project delivery are mostly identified as one major factor which leads to high cost of projects (Bowen et al., 2007).

This study therefore assessed the impact of procurement procedures on project cost performance.

1.3 AIM AND OBJECTIVES

1.3.1 Aim

The study aimed at assessing the effects of procurement procedures on project cost performance.

1.3.2 Objectives

In attempt to accomplish the aim of this study, these subsequent specific objectives were set:

1. To identify the various procurement procedures used on projects in the Cape Coast Metropolitan Assembly;
2. To identify the impacts of procurement procedures on project cost performance in the Cape Coast Metropolitan Assembly; and
3. To determine the procurement procedures that best improve project cost performance in the Cape Coast Metropolitan Assembly

1.4 RESEARCH QUESTIONS

1. What are the various procurement procedures?
2. What are the impacts of procurement procedures on project cost performance?
3. Which procurement procedures best improve project cost performance?

1.5 SCOPE OF THE RESEARCH

In geographical setting, the study's scope was restricted to procurement professionals within the Cape Coast Metropolitan Assembly. The Cape Coast metropolis was chosen in terms of the geographical scope of this study because of its proximity to the researcher and this will make the retrieval of questionnaire easy. The dataset was

obtained from a sample selection of procurement professionals working within the Cape Coast Metropolitan Assembly in the Central Region of Ghana.

1.6 RESEARCH METHODOLOGY

To achieve the study's aim and its specific objectives looking the ways in conducting this research and the nature of the study, a two-stage approach involving field investigation and desk study was considered. A thorough review of pertinent literature was conducted so as to come out with theoretical models that are in support of the study's theme. The main data method that used was questionnaire conduction. Kumar (1999) indicated that the benefit in engaging this research style is its ability to generate results that give a precise representation of the sample. The design and the administration aspect of the questionnaire to procurement professionals was done by the researcher. The sample size was determined with the use of snowball sampling technique so as to understand a sample size of the total number of respondents; the two sampling techniques chosen have that advantage in ascertaining the main respondents in a specific targeted population (Kumar, 1999). Finally, the data collected were analyzed using descriptive statistics and relative importance index rankings for the various phenomenon identified.

1.7 SIGNIFICANCE OF STUDY

This study considered an in-depth assessment on the effects of procurement procedures and the result of the study will be of much importance to the procurement aspect of construction projects, the delivery of projects, and the project cost performance in general. The findings and recommendations of the research study will help management to formulate effective strategies towards addressing the problem of poor procurement procedures on projects cost performance. Furthermore, the study will also enhance

understanding of the procurement procedures and how it affects the projects performance in terms of time, cost and quality. The study will also provide important as well as practical information that will assist the client in both the private and the public organizations for their work duties and as a material for future research. Finally, the research work will make approximate contribution to the body of knowledge in relation to project management fields as it will give comprehensive information on the importance, purpose and effectiveness of procurement procedure in order to achieve value for money.

1.8 STRUCTURE OF REPORT

The research was structured into five interrelated chapters. The chapter 1, titled "Introduction", presents the background, problem statement, aim, objectives, research questions as well as the scope of the research. The chapter 2; titled "Literature review" shall discuss fully the effects of procurement procedures on project cost performance. The chapter 3; the research methodology will emphasis on the systematic approach that will be engaged in the research and as well provide discussions on the data collection analytical tools. The chapter 4 shall make presentation on the empirical data analysis as well as discussions on the bases of the field survey that answers the questions and objectives of the research. The chapter 5 will be the Summary of findings, Conclusions and Recommendations.

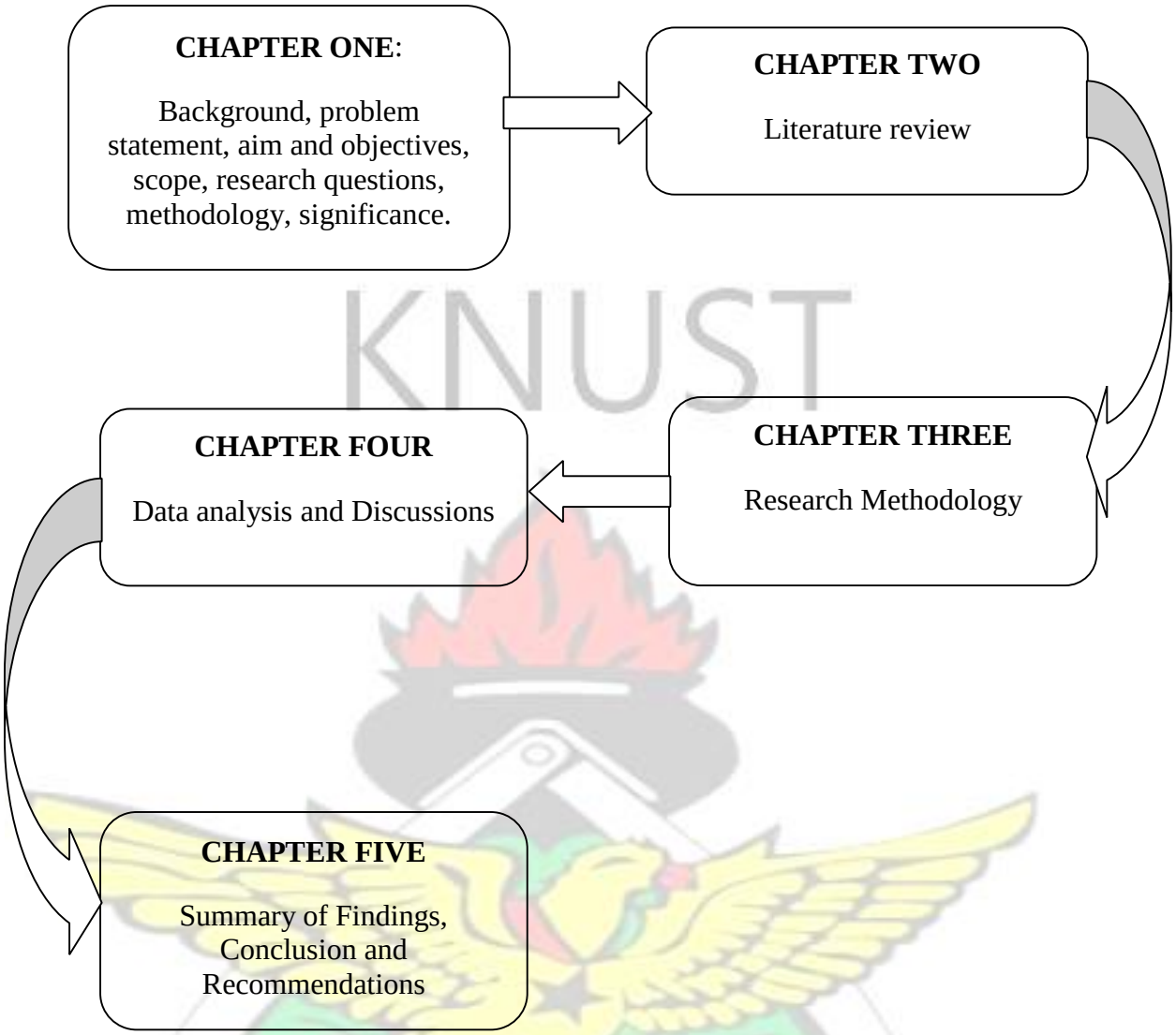

Figure 1.1: **Workflow of study**

Source: Author's own construct (2016)

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

In this particular chapter, the relevant benefits and challenges associated with the adoption of knowledge management practices in civil engineering construction firms were reviewed. Content analysis of existing theories were visited to ascertain their

validity and practicability in the context of the construction industry. These theories are anticipated to aid the identification of the benefits and challenges associated with the implementation of knowledge management practices.

2.2 OVERVIEW OF PROCUREMENT

Procurement in the early 1970s was regarded as a clerical, reactive and a cost center within most institutions. Nevertheless, the situation has evolved in contemporary times. Accenture (2007) indicated that procurement has become a strategic, pro-active, valueadding, solution-providing business function, which aids the organization with complex concerns like profitability, corporate growth and competitive advantage. A great range of forces that embodies resource scarcity, shifts in consumer demand, environmental pressures, technology advances, activism, governmental regulation, changing demographics and globalization are currently reforming the industries, products and markets (Carter et al., 2007). Carter et al. (2007) indicated that organisations are turning to their procurement function for aid during these trying times and the procurement function can represent between 50 to 75 percent of the overall expenditure of these organisation.

Wight (2001) defined procurement as the process of acquiring services and/or goods at a preeminent overall fee proprietorship, at the ideal time, in the right place, and in the right quantity and quality for the indirect and direct benefit of use to the organisation. Angeles and Nath (2007) highlighted that procurement normally represents one of the largest expense items in an organisation's cost structure. According to Kwakye (1997), procurement defines the process used by sector organisation to acquire services or goods from a third party. Public procurement entails the things supporting government works ranging from routine items (e.g. stationery, printed forms, furniture or temporary

office staff); to multifaceted spend areas (e.g. support to major change initiatives, construction, Private Finance Initiative projects or aircraft carriers) (Kwakye, 1997). Furthermore, procurement includes also the growing spend where the third and the private sectors make provision for important services straight to citizens in areas like social care, further education, health and welfare-to-work. Services as such may as well be directly offered by the public sector and even in other instances such delivery can be picked up via procurement means. A public institution may bid for state project against the private firms by means of a formal competitive procedure. A complete procurement planning is important. Clients determine the kind of goods and services needed to execute the project, the need for co-financing, when they must be delivered, which purchasing and contracting procedure best suit each contract, and what standards are required.

2.3 PROCUREMENT PROCESSES

The procurement procedures include all the steps from the development of the need to the assessment and evaluation of the procured good, service and work. The procurement model developed by Weele (2005) is extensively accepted to describe the procurement process of goods, services and works. This model involves six phases for the procurement process which includes:

- Specification
- Selection
- Contracting
- Ordering
- Monitoring after-care.

Heijboer (2003) highlighted that the front-end of the procurement model is extended including the preparation phase. The model focuses on the most significant phases on the final specifications of the product or service. These phases include the preparation phase, the specification phase, the selection phase, and the contracting phase. Heijboer (2003) further indicated that the strategic phases of the process include the preparation phase. Contracting phase and specification selection form the preemptive stages of the purchasing process (Harink, 1999). Notwithstanding, the operational phases of the procurement process include final three phases which include ordering, monitoring, and after-care (Harink, 1999). The extent to which the specifications of the final products are influenced declines in every step from the preparation phase onwards. Together with this declining effect also the influence on sustainability and innovation declines in every step from the preparation phase onwards (Vos, 2010).

2.3.1 Preparation Phase

Rolfstam (2009) highlighted that in the preparation phase the questions about what should be procured and how the goods, services or works will be procured are answered. Buyer/supplier collaboration strongly impacts on what will be procured. Furthermore, a perfect understanding in relation to the market as well as the technical capabilities should provide the basis for adopting a particular tendering procedure. Within the tendering procedures, the use of criteria plays an important role. The choice of a specific tendering procedure also directly influences which criteria can be used. The criteria to be applied have a significant influence on the steer ability of the sustainability and innovativeness of the products to be procured (Rolfstam, 2009).

2.3.2 Specification Phase

In the specification phase the requirements for both the tenderer and the tender are drawn up. In the specification phase the intentions of the preparation phase on what and how should be procured are formulated. The first is achieved by designing requirements for the product in such a way that it is guaranteed that the specifications of the final product will meet the requirements. The latter is done by selecting the most appropriate tendering procedure (Telgen, 2007). However, the selection and award criteria for the tender and the tenderer should be designed in the specification phase.

2.4 PROCUREMENT PROCEDURES

In relation to public contracts, Public Procurement Entities (PPE shall apply the standard tendering procedures set forth in the Public Procurement Act, Act 663 of 2003. The tendering processes remain the same for services, goods and works. Below are the types of procedures that are established in Law:

- Open Procedure
- Restricted Procedure
- Two-Stage Procedure
- Single Source Procedure
- Request for Quotations (RFQ)

2.4.1 Open Procedure

Open procedures best suit all kinds of public contracts. Open procedures can take the form of National or International competitive tendering (Public Procurement, 2003, Act 663, Part V Sec.44 and 45). All interested Tenderers who meet the required criteria as set out clearly inside the contract notice (Advertisement) and the Tender document may submit a tender. Notice on the contract which describes the key features of the contract

is made available in at least two newspapers of extensive dissemination and on Public Procurement Authority (PPA) website. Tender documents contain in details the terms and conditions, the award criteria, and the content of the contract (Public Procurement Manual, 2007). Furthermore, inside the open procedure of tender document, any firm which has interest in participating do has the opportunity to make submission of a tender. Public Procurement Act (2003) affirmed that the tender must meet the standard of the procurement unit that handed out the tender document. No changes or what so ever to the original application documents such as the conditions and terms of the contract which is backed by law, since that render the tender document difficulty on the basis of it not being impossible by comparing the offers. The contract terms are clearly displayed in an exclusive way by the Procurement Unit in their demand for the tenders. Any breach of the principles by tenderers automatically rules them out (Public Procurement Act, 2003).

2.4.1.1 Recommended Steps for Open Procedure

Public Procurement Manual (2007) presented the under listed as the recommended steps to be adopted in an open procedure:

- The preparation of Contract Notice and Tender Document
- Publishing of Contract Notice in published in at least two newspapers of wide national circulation and on PPA website
- Receiving responses on the Tender
- Sending of Tender Document to Tenderers
- The Submission of Tenders by the Tenderers
- Establishing the Tender Evaluation Panel
- Commencing the Tender Evaluation

- Submitting the evaluation Report to Entity Tender committee
- Contract Notification of Award Notice issued and successful Tenderer informed in writing.

2.4.2 Restricted Procedure

The restricted procedure provides that only three to six contractors or suppliers are short listed and requested to submit their proposal (Public Procurement Manual, 2007). These companies are selected at the early stage of the competition and the invitation to participate in contracts. In inviting tenderers to participate, the firms are to prepare statements with regards to the firm's performance capability, special know-how, and reliability to judge their suitability for the round two (Stergiou, 2009). According to Public Procurement Manual (2007) Sec.4.2.2 indicates that restricted tendering defines the process used to directly invite or shortlist known or pre-registered contractors, and it is dependent on endorsement being decided by the PPA. Restricted tendering is the procurement method where: an open competitive tender fails to bring an award of contract; the requirement is of specific nature or has requirements of public safety which make an open competitive tender unfitting; the urgent nature of the requirement may be practical for an open competitive tender; and the number of potential contractors is limited.

For the restricted procedure of tender, contractors who have the right to submit tenders are those that were selected out of the pre-qualification procedure during participation (Public Procurement Act, 2003). The Public Procurement Bulletin contains contract notices published; it describes the criteria that will be used to select tenderers and the scope of the work. The shortlisted tenderers will be allowed to make submission of a tender as they receive the tender documents. In recommendation, the least number of

tenderers that will be selected should not be less than six, in situations where the number of qualified tenderers is sufficient (Public Procurement Act, 2003).

2.4.3 Two-Stage Procedure

According to section 38 of Public Procurement (Act 663) (2003), the Two-stage Tendering is rarely used when Procurement Entity calls for tenderers in the early phase to make contribution to the specification details of the work. New comprehensive specifications after the review and consultations are prepared and in the second stage a restricted tender issued to all qualified participants from the first-stage. Two stage tendering is the best method for the Procurement Entity in cases where it is not possible to ascertain their characteristics, the focus of the works is giving in to quick technological improvements, or to formulate comprehensive plans or specifications of the works. (Public Procurement Act 663, 2003).

2.4.4 Single Source Procedure

Section 40 of Public Procurement Act 663 (2003) stipulates that this procedure normally sourced from a supplier with no competition (direct procurement), and using

Guidelines, this procedure is depending on a definite consent from the Public Procurement Board. The single source procedure will best suit activities that can only be delivered by the single source for policy, technical or physical reasons like demanding the usage of exclusive methods that are available from just a single source; and the acquisition is for immediately required corrective works, if it is limited to the least requirement in meeting the vital need up until a procurement by other procedures can be satisfied.

2.4.5 Request for Quotations (RFQ)

According to Section 43 of Public Procurement Act 663 (2003) the RFQ is also referred to as the "shopping". It is founded on the grounds of making comparison of price quotations gotten from at least three suppliers against ensuring competitive prices. Shopping is used in the cases where:

- The projected value is lesser when compared to the threshold, as stated in the Schedule 3 of the Public Procurement Act 663 of 2003.

Table 2.1: **Request for quotations thresholds**

Price Quotation	**Contract Value Threshold**
a. Goods	Up to GHC 200million
b. Works	Up to GHC 500million
c. Technical Services	Up to GHC 200million

Source: PPA (2003)

- The requirement is limited to work activities like repairs, redecoration and some slight alterations that do not even demand thorough specification and could readily be estimated by the contractor on just unassuming site visit.
- It is recommended that for a higher value or a complicated requirement, the appropriate format to use is the Standard Tender Document.

2.5 CONSULTANCY SERVICE PROCEDURE

The consultancy service procedures are the contracts for seeking the consultation of advisory and intellectual nature, unlike the other kinds of services in which the corporeal aspects of the activity preponderate (Public Procurement Act 663, 2003). For consultancy service, the intellectual input and aspect exceeds as well as dominate over the other aspects of the contract. The services of consultancy ranges from work projects, studies, technical assistance, research etc. Inside the Public Procurement Regulations,

it is required that, services of consultancy are awarded on the basis of the procedures inside the PPA 663 of 2003.

2.5.1 Methods of Selecting Consultants

Consultant services under procurement requires tender documents as well as procedures that are distinct from the other form of standard goods and works. Under procurement of consultant services, below are the methods of selection:

- Single Source Selection (SSS)
- Least Cost Selection (LCS)
- Quality and Cost Based selection (QCBS)
- Selection Under Fixed Budget (SFB)
- Selection Based on Consultant's Qualification (SBCQ)
- Quality Based Selection (QBS)

Source: Public Procurement Manual (2007)

2.5.1.1 Quality and Cost Based Selection (QCBS)

The QCBS is the typical technique for selecting a number of services of consultancy; it involves what is called a "merit-point score" scheme. The Personnel and the Consultants' technical experience and capabilities, as well as the quality of the submitted proposal which is responding to the Terms of Reference, is going to receive highest percentage of the awarded points. Only consultants who meet the minimum or the least technical score for their technical proposals will be considered for financial proposal. The common practice among Ghanaian firms is that, the preeminent compromise on cost of the services and technical quality is mostly realized through allocating 80% to the proposal's technical features and the remaining 20% of the total cost to financial score (Public Procurement Manual, 2007).

2.5.1.2 Quality Based Selection (QBS)

QBS may seem difficult to define, complex, or highly specialized tasks, where the most proficient method available is needed not considering the price. In a case like this, evaluation is limited to just technical proposals, and the tenderer that wins is called in for negotiations concerning the contract and the prices of services. Quality Based Selection best suit the following assignment types that are highly specialized and complex to precise define the Terms of Reference as well as the needed ideas from the consultants, and where the expectation of the client from the consultant is a demonstration of novelty in their proposals (e.g. design of a harmful waste control plant or of a built-up major plan, multi-sector feasibility studies, sector studies, financial sector improvements tasks with a long term effect and which aimed at having the best professionals available and tasks that can be done in various ways).

The estimated budget should not be indicated in the Request for Proposal, but the estimated time and number of key staff may be provided, that will specify the information given is just an indication, and so consultants can suggest their own estimates and staff compositions.

- Request for Proposal may demand just the submission of the technical proposal, or may demand the submission of the financial and the technical proposals together at a time, which will however be in separate envelopes. The financial envelopes are only opened when their respective technical proposals have been considered as the highest. The remaining envelops are given back sealed to the tenderers, after all consultations are successfully done.

- If invitation is made for technical proposals after evaluation of the technical proposals, the invited Consultant will be the one who topped the ranked technical proposal so as to make submission of a thorough financial proposal.
- The Consultant as well as the Procurement entity should afterwards negotiate the contract and the financial proposal
- Additional aspects concerning the selection process are similar to those of QCBS.

Source: (Public Procurement Manual, 2007).

2.5.1.3 Selection under a Fixed Budget

This is mostly engaging in situations where the assignment can be defined clearly, is simple, and there is only one restricted budget presented for the services. Under the FBS, Consultants are requested to make submissions of their foremost technical proposal which should be within the award of contract and the fixed budget price and that will be made the highest scoring technical proposal. FBS is appropriate for assignment that can be defined in a precise manner and are simple with a fixed budget. RFP will only show the budget available and will seek the Consultants to make available their foremost financial and technical proposals in two separate envelopes, without exceeding the stated budget. TOR on the other hand must be prepared in careful manner so as to ensure sufficiency of budget to the Consultants to execute all projected tasks. The financial envelopes are only opened when their respective technical proposals have been considered as the highest. The remaining envelops are given back which are still sealed to tenderers, after all consultations are successfully done.

Financial proposals are rejected when they exceed the stated budget. The Consultant whose foremost technical proposal falls inside the stated budget and it is as well

considered as the highest ranked is awarded the contract (Public Procurement Manual, 2007).

2.5.1.4 Least-Cost Selection

The Public Procurement Manual (2007) indicates that this method is relatively apt for selecting consultants for tasks that are of a routine or standard nature (engineering design of non-complex works, audits) where ingrained professional standards and practices exist, and as well in situation where the contract value is lesser. The least succeeding score concerning the desired quality is stated and proven inside the RFP. Technical as well as Financial proposals are demanded to be delivered in two different envelopes by the qualified tenderers. First, the technical envelopes are opened and then appraised. Tenders who fall below the least succeeding score are considered out. The financial envelopes for the qualified tenderers are opened publicly. The tender with least price is chosen for the award of contract (Public Procurement Manual, 2007)

2.5.1.5 Selection Based on Consultants' Qualifications

This method best suit small tasks in cases where the need for evaluation as well as submission of detailed competitive proposals is left unjustified (Public Procurement Manual, 2007). Relevant information pertaining to the consultants' competence as well as their experience in relation to the assignment are demanded. The consultant who best suit the qualifications as well as the references is chosen. The consultant that has gotten selected is then invited to make submissions of both the financial and the technical proposals; after which they will be invited for negotiations on the proposal as well as the contract (Public Procurement Manual, 2007).

2.5.1.6 Single-Source Selection

This type of selection of consultants is deficient of competition looking at cost and quality, the selection is not clear, and it as well may heighten practices that are unacceptable. Therefore, this type of selection should be employed in incomparable settings. Justification for this method should consider a careful examination so as to ensure efficiency and economy. This selection method is suitable in the case where there is an advantage over the competitive selection. For example;

- for assignments that exist as a natural continuation of the preceding work done by Consultant
- where quick selection becomes key (like an emergency situation)
- for cheap (as in cost) assignments where only one consultant has the needed experience to carry out the assignment.

Source: Public Procurement Manual (2007)

2.5.1.7 Negotiation Procedure

The negotiation procedure is the only procedure employed in situations where the key reasons stated in the normal certified contract terms permits. For instance, in a case where no financial outcomes can be anticipated from an open or closed process: when there is distress of time because of the incidence of unexpected phenomenon and it no more influence of public procurement procedures on delivery of maintenance works; if such a practice has previously been performed without fabricating any financially viable outcomes; or where there is a single particular contractor or supplier that can provide the needed service.

The negotiation procedure is appropriate for clearly defined and exceptional situations.

Negotiation procedure can be carried out without or with previous publication of contract notice. The rules attached to confidentiality and transparency must be applied accordingly, for instance:

a) Negotiations should be done separately for each tenderer;
b) There should be confidentiality of each tender document;
c) Each and every tenderer must meet similar requirements, and must as well have the equal information;
d) Treatment of tenderers must be the same and must be ensured;
e) Each and every activity must be noted

2.5.1.8 Accelerated Procurement Procedures

This procedure creates other procedures to function during the time where demand enhanced accountability, flexibility and responsiveness by public institutions. Under the procedure of accelerated procurement, there are two basic types: the non-emergency and emergency types. Emergency procurement is mostly applied to cases where equipment, assets or life is at standards or risk of public safety, health or welfare needs to be considered deprived of further delay. Example is like how government's response to epidemic and natural disasters (example, typhoons, earthquakes, floods). The nonemergency procedures also come into play when unexpected situation arise and demand a pressing rejoinder by the public institutions (Stergiou, 2009).

2.6 CONSTRUCTION PROJECT PROCUREMENT SYSTEMS

In order to assess the upshot of the various kinds of procurement systems on the performances of projects, it imperative for us to be familiar with the operation and concept of the various kinds of systems of procurement. Masterman (1996) identifies project procurement systems into a number of areas founded on the critical interaction

and relationship between construction assignments and the design. Below is the various categorization according to Masterman (1996):

- Management-oriented System
- Separated and Cooperative System
- Integrated System

2.6.1 Separated and Cooperative System

Under the separated and cooperative system, the construction of the project and the responsibilities of designing are parted and are performed by dissimilar independent institutions namely contractors and the designers. The separated system in some cases called sequential or linear system of contracting or multiple tasks contracting method. The separated system defines the system where the various developmental activities of a project starting from feasibility study all through to handing over, are carried out in a sequential order. Usually, the whole design has to be ready before any proceedings like tendering and construction works are carried out. It is divided further in to two subcategories; the Variants of the Traditional Systems and the Traditional Systems.
Under the Variant System are the sub-divisions of Accelerated and Sequential methods.

The sequential method also referred to as the single stage tendering method is where the client will hire a team of professional consultants to represent him in producing construction drawings, tender document and specification and to also oversee the tendering processes so as to make selection of a contractor. Once a contractor is selected and is afterwards awarded the contract, he will carry out his activities based on the design as well as the specification prepared by the building owner's consultants. For the accelerated method, it is regarded as the ground-breaking approach in speeding up contractor selection and as well the commencement of the project. The accelerated

method is divided into 2 sub-categories – the Negotiated and the Two-stage tendering methods. The two methods involve introductory discussion involving some selection of suppliers or contractors' submission of cost negotiation or fixed tender.

2.6.2 Integrated Procurement Systems

According to Ashworth (1983) the tasks are normally contracted out to a particular contracting organization. Integrated procurement system is also referred to as a single or parallel responsibility system of procurement where the supplier or the contractor will only require a deal with just a single institution for the constructing and designing the anticipated project. In cases like this, the supplier would have been engaged and be in charge of the design as well as the construction teams. Under the integrated procurement system, the building owner and his/her consultants will be responsible for the preparation of the tender document that will include client's requirements and a project brief and invitation for contractors to tender. Through the submission of tenders, contractors who were invited will include also their foremost cost proposal, own design and construction proposal. The most qualified contractor will then enter into contract agreement with client and his/her consultants on the bases of a fixed duration as well as lump sum price (Ashworth, 1983). The various types of this particular project delivery systems are the Develop and construct, the Turnkey and the Package deal.

The above systems that require the supplier to be in charge of both the construction and the design aspects of the project, permit for the initial phase of construction by reducing the pre-tender undertakings as they decrease the process time.

2.6.2.1 Package Deal Contract

This package is also referred to as the "all in" contracting which deals with the situation where a supplier/contractor is assigned to the task of everything that has to do with the design, the construction and the delivery of the construction project. In this system, the services to be provided by contractor will include the sketch and final working drawings, project financing and construction, preparation of project brief, getting all the approval from authorities, furnishing as well as commissioning of accessories and equipment, and final handling of the overall project to the building owner (client).

2.6.2.2 Turnkey Contract

The Turnkey contract refers to "all in" or package contract and it is an American term. Under this contract, the contractor/supplier is appointed to be responsible for all the necessary and required activities under the construction, completion, commissioning and hand over of project to the client. "Turnkey" as a word refers to accessing the project after its completion by "turning the key" to enter the completed project. Here, the contractor is in charge of every aspect of the project from the project brief preparation, financing, getting endorsement, decorating and furnishing, commissioning and handling after completion, designing, cleaned and project is ready for use (Allen, 2001).

2.6.2.3 Develop and Construct Contract

Develop and construct contract is another type of the integrated procurement method which relate to the design and build. Under this contract, a contractor has the responsibility of the design and construction aspects of a particular project. The difference between this type of contract and the others is that, the client together with his/her consultants prepare the outlines of the designs and later passed the designs on

to the contractor to develop as well as produced these designs in comprehensive working drawings. After developing and producing the design, the contractor goes on to the main construction phase of the project on the basis of the design.

2.6.3 Management Oriented Procurement Systems (MQPS)

Management oriented procurement systems better stresses on the integration and as the management of the construction and design phases of projects. The management aspect of the construction and the design of a project under this system is awarded to a contractor who will be in charge as a managing consultant in representation of the building owner. The construction project itself is hired to many subcontractors or "specialist" who go into contract agreement with the client or the management contractor. This method was introduced as a result of the perception that a contractor or builder has the needed skill for the management aspect of the construction as well as the design of a project.

Listed below are the various methods of procurement that fall in the category of MQPS:

- Design and manage
- Management contracting
- Construction management

Construction management as well as management contracting are methods of "fasttracking" procurement approach where a contractor goes into contract with the client and he/she is paid to supervise, manage and procure the project instead of building the project. The main project is contracted out to specialist or many package contractors. In this case, the contractor act as the construction consultant forming part of the building owner's team.

Under the 'Design and manage' method, one institution or organization is hired to be in charge of the designing and the construction aspects of the project. The company executes the project itself, but the contracting part is opened to many package contractors or professional sub-contractors, who then go into contract with the building owner.

2.7 CHALLENGES ASSOCIATED WITH PROCUREMENT PROCEDURES

Anvuur et al. (2006) indicated that the poor nature of construction performance; a number of reports attributed the cause of the poor performance of construction to the public sectors' lack of profitable advantage in the workout of their procurement function. As further highlighted by Anvuur et al. (2006), contracts for securing goods demand time to get to financial closure and are as well exposed to needless interruptions. According to Westring (1997), the causes of the delays are delays in appraising suppliers, a wide system of controls, reviews as well as approvals, deferments in technical specification preparation, and extensive post-award negotiations. What leads to lack of confidence in funding for procurement undertakings is poor procurement practices which creates a continuous range of delayed payments of arrears and fees to contractors (World Bank, 1996). Many suppliers' delivering of services and goods to government bodies as highlighted by Westring (1997) try to minimize their losses by completely abandoning the work or cutting corners which result negatively on the delivery of the project and increases the chances of conflict between the client and the contractor.

According to Anvuur et al (2006), monitoring and control of procurement of materials presents numerous challenges and therefore involves a long-term strategic planning by the private and the public sectors. Most procurement entities resort to making of

contractual payments even in advance of the projected dates of the construction project so as to prevent lapse of budget allocation and early payment of mobilization funds given to contractors which exceeds significantly the 15% allowable (World Bank, 1996; Dansoh, 2004; Westring, 1997). Uromi (2014) also identified challenges associated with procurement of goods, services and works in developing countries as lack of guidelines, procedures and regulatory instruments, general alertness on the advantage of public procurement including its regulations and laws. There exists lack of objective appraisal mechanisms between the project's stakeholders and the awareness on general procurement markets.

Westring (1997) opined that challenges of associated with procurement procedures in most developing countries like Ghana include an extensive system of controls, evaluation delays, land ownership disputes, delays in the preparation of technical specifications and drawings, extensive post-award negotiations, as well as reviews and approvals. In most countries, service providers cut corners to limit losses encountered or even abandon the whole work completely (World Bank, 2003). Eyiah and Cook (2003) also highlighted that long processes involved in the payment of contractors pose serious challenges to the entire procurement procedures. Furthermore, the poor procurement practices as well as the financial limitations leads to overdue payments and arrears to consultants as well as contractors and interest accrued as a result of late payments together with the recurrent price fluctuations due to expensive renegotiation serve as challenges to the procurement procedure (World Bank, 1999). Dansoh (2004) indicated that most procurement problems result from the lack of needed respect from neither party to the contract by expecting contract to be ad-hoc, binding methods to fiscal size projects and poor monitoring and control of the entire procurement procedures.

2.8 CONCEPTUAL EXPLANATION OF PERFORMANCE

According to Rhinesmith (1993), performance defines the accomplishment of an assignment given measure against cost, standard of accuracy, speed and completeness. In contracts, performances are considered as the accomplishment of a task, in a way that set the performer free from all obligations inside the contract. Baldridge National Quality Programme (BNQP) (2006) pinpoints four performance types: financial, product and service, marketplace and operational, and customer-focused. To achieve effectiveness in performance, institutions should learn to outdo and as well exceed the best global firms in their respective sectors (Munro-Faure, 1995). For an enhanced performance, firms must measure their benchmark and performance (Beatham *et al.*, 2004). Performance in procurement is considered as the degree to which procurement results show high levels of better performance in lead labour-productivity, cost, capacity utilization and time (Martinez-Martinez and Campus, 2008). To increase the value of the procurement function and achieve performance goals, efficiency and effectiveness are the two most important dimensions of performance to be considered. Whereas effectiveness deals with the measuring of how the system attains its projected output, efficiency thus, deals with the measuring of how the inputs have gained a successful transformation (Kumar, 1999).

2.9 CONSTRUCTION PROJECT PERFORMANCE

Construction project accomplishment depends mostly on performance success. Various studies have been conducted in the area of performance of construction projects. Among the key reasons why construction projects normally fail is the selection of a procurement system which does suit the kind of project at hand (Dissanayaka and Kumaraswamy, 1999). The three most important grounds on which the performance of a project rely are: work accomplishment structure, feedback effects on work quality as well as

productivity, and effects from the upstream phase straight to the downstream phase (Reichelt and Lyneis, 1999). According to Thomas *et al.* (2002), the foremost criteria for construction projects' performances is standard of quality, resources, progress of work, management capabilities, financial stability, reputation, relationship with clients, amount of subcontracting and relationship with subcontractors.

Construction time is more and more important as it mostly serves as a key benchmarking for measuring a project performance and project organization efficiency (Chan and Kumaraswamy, 2002). According to Cheung *et al.* (2004), the performance of a construction project classifications like time, people, health and safety, cost, environment, communication, quality, and client satisfaction affect project performance. Navon (2005) indicated that, a system that controls performance is important in identifying the factors affecting effort of a construction project. Pheng and Chuan (2006) opines that, human factors have direct effect on determining construction project's performance. According to Ling *et al.* (2007), the most significant practices which relate to the scope management the control contract document quality, degree of changes to the contract, and quality of response to perceived variations.

2.10 PROJECT COST PERFORMANCE

Tichacek (2005) avers that every project has some form of criteria for measuring it performance that will show whether the project was successfully executed or not. Cost, Time, quality and safety are some of the many criteria used in measuring performance in construction project. Cost, being a finite resource as well as the most contended for commercial resource, forms the most highly visible and a universal metric for performance which indicate the success of a project. Additionally, cost forms the measure used in defining how a project is performing, is probable to perform or has

already performed (Tichacek, 2005). Memom et al. (2010) indicated that cost forms one of the major considerations all through the life cycle of project management and it can be considered to be among the most significant factors of a construction project and as well the force behind the success of a project. Notwithstanding, cost's established importance, it is common to observe a construction project which is failing to realize its targeted objectives in the cost specified. Ashworth et al. (1983) highlighted that cost is the outflow earned by a contractor for services, contractor's profit, labour, plus overheads, plant financing, and utilities. Cost is the most competed for corporate resource; and also a finite resource, gives more basis for project controls and management which is willing to pay out the intelligence and the effort needed to correctly manage project cost (Tichacek, 2005).

2.10.1 Direct Cost

Cost which can be specifically identified within the activity or project is termed direct cost. These costs include direct material costs, labour costs, direct equipment costs and direct expenses. Similarly, direct costs refer to the costs that capable of being ascribed to a single assignment of a construction project that are useful to the major contractor's cost. Direct costs are normally linked to the performance of the construction labour group. The distinctive nature of direct costs is that total expenses can be charged to the activity (Njamu, 2004). The subcontracted costs may be considered to be direct costs which includes transportation, equipment, mobilization and demobilization, direct labour, setup, second tier subcontracts, charges for profit and overhead, and materials and supplies (Tichacek 2005).

2.10.2 Indirect Cost

According to Njamu (2012) indirect costs are costs which cannot be directly attributed to any activity or project, together with costs that may be incurred whether the project is carried out or not and are also called overheads. These costs represent two or more projects like the project management software license, access to a training room, and utilities for the performing organization etc. (PMP, 2000). Also, Preliminary and general costs form part of the indirect costs that are not recovered elsewhere in the estimate (Njamu, 2004).

2.11 FACTORS AFFECTING PROJECT COST PERFORMANCE

Various studies conducted have meaningfully supported the body of knowledge in relation to time performance in projects in construction sector over the years (Chan and Kumaraswamy, 2002). However, project performance which relate with cost has been studied from the 1960s (Iyer and Jha, 2005). Pheng and Chuan (2006) indicated that numerous studies have also been conducted on project performance in terms of factors relating to time and cost. Many unforeseen changes and problems from new design ascends during the phase of construction, which normally leads to problems relating to time and cost performance (Chan and Kumaraswamy, 1996). Studies have revealed that unexpected actual conditions, ineffective site management, and slow approach in making decision which engages all members of the project team to be three major factors that causes delays as well as time performance problems in most construction projects. However, the two performances (i.e. time and cost) has been known to be the general hitches in the world's industry of construction (Okuwoga, 1998).

According to Dissanayaka and Kumaraswamy (1999) type of client, complexity of construction project, communication and team experience are well connected to time

performance; while complexity of project, characteristics of client as well as the contractor are linked together with the project cost performance. Furthermore, budget performance as well as project schedule are influenced by active processes of feedback (Reichelt and Lyneis, 1999). These dynamic feedback processes comprise the effects between the work phases and stages, the rework cycle and feedback loops creating changes in productivity and quality. The factors that affect project cost performance include: decision making; owners' competence; monitoring and feedback by the participants; top management support; project manager's competence; project manager's coordinating and leadership skill; economical condition, dexterity of project participants; social condition; and climatic condition (Iyer and Jha, 2005). Notwithstanding, coordination between project parties is considered to be the most important factor among those with the most influence on cost performance of project. Managerial and technological strategies can be employed to upsurge the construction speed and as result upgrade the time performance of the construction (Chan and Kumaraswamy, 2002). It is stated that fast information and effect communication transfer between parties of a project, detailed construction activities with advanced available software, and better selection and training of managers can assist in accelerating the performance. However, managing speed in procurement, construction and engineering projects forms an important area in a competition between inventive companies (Jouini *et al.*, 2004). Frimpong *et al.* (2003) also identified material procurement, monthly payment difficulties, poor technical performances, escalation of material prices, and poor contract management as factors affecting the cost performance of construction projects.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Thorough discussion of the research procedure applied in this research are addressed in the third chapter. Prime matters bothering the theoretical position of the researcher were explicitly discussed. Meanwhile, a summarized deliberation of the strategy applied in the survey design, the purposed respondents, the essential sample size and the administration of the questionnaire. Finally, the manner of data illustration and analytical tools utilized for the analysis of data collected were discussed.

3.2 THEORETICAL CONSIDERATION AND STANCE OF THE STUDY

Three prime philosophical considerations were adopted as an aid in the gathering of data subsequent, analysis and the interpretation of the outcomes so as to attain a stout investigation free of the researcher's view and impact. Philosophical issues such as existence, knowledge and value have significant impact on the research design (Koeting, 1996; Christou et al., 2008). Hence, such philosophical issues of ontology, epistemology and axiology need to be explicitly covered as they shape the stance and selection of the study assumptions.

Ontology defines the interrogatives of the existence of the physical world which is independent of our understanding, that is philosophy of mankind. Hence, it can be deduced that; ontology connotes the existence of occurrence where the appearance of things differs in manners that are of different societies of theoretical understanding. This thought was therefore relevant for this studies due to the assessment of procurement procedures on project cost performance in the metropolitan assemblies

have misplaced simplification therefore contradictory empirical conclusion are settled at by diverse researchers. Objectivism was the viewpoint used by the researcher.

Epistemology is related to the relationship of the researcher to reality and the path that will be followed in quest for the truth, that is the queries of 'how knowledge is formed?' (De Vos, 1998). Due to this, two positions of epistemological positions are established: positivism and interpretivism. Bryman (1992) noted that whereas scientific knowledge is proven through accretion of verified facts in positivist, social occurrences do not exist freely of our understanding or meaning of them, interpretivist is in support that, instead it is the understanding or interpretation of communal event which influences public representativeness (Osei-Hwedie, 2010). The researcher, however, adopted the positivist position of knowledge in this research, hence, the researcher was of the view that the identification and analysis of the assessment of procurement procedures on project cost performance was done unbiased which can be faux.

Finally, according to Bosse (2006), axiology defines the field of philosophical investigation which shows consideration to challenges like the dissimilarities between value and a matter of fact. Bosse (2006) further added that the axiology position can either be social constructivism or realism. The social constructionists have the perception that researchers have values that help to define what are known as evidences and interprets which are made; meanwhile the realists perceive that selection of research can be explore by the objective criterion. Accordingly, the position of the researcher was that of realism. The researcher was of the perception that the choice of how to study the assessment of procurement procedures on project cost performance ought to be established by objective standards (Osei-Hwedie, 2010). In totality, the study utilized a scientific and positive instead of a normative stance in arriving at what were recognized

as realities and their relative meanings which was created in handling the interest of the study.

3.3 RESEARCH DESIGN

This study adopted a quantitative method with structured questionnaire for the purpose to assess the impact procurement procedures on project cost performance. Naoum (1998) is of the view that, the frequently used method of gathering data for performing surveys is to discover proofs, views and opinions. According to Oppenheim (1996), a survey questionnaire is used as it improves replication and as well enhances reliability of observations as a result of its characteristic uniform measurement and sampling procedures. The researcher adopted a survey questionnaire as a result of the need for generalization on the findings across the industry of construction.

Grounded on a critical review of the existing literature and study objectives, an survey questionnaire was organized and delivered by hand to the respondents. To make it more understandable to respondents, words and sentences used were simple and straightforward. The design of the questionnaire was in two main sections: the first section formed the demography of respondents whiles the second section will address the specific objectives. Practically all the questionnaires have closed-ended questions to certify consistency of respondent feedback. For the reason that it is not totally possible to design all questions as closed-ended, some of the questions were left openended, to acquire numerical data or to lobby some written comment. A five point Likert scale of 1 to 5 was employed so as to measure the strength of respondent's view or

opinion.

3.4 RESEARCH STRATEGY

Research strategy is the process within which the objectives of the research can be queried (Naoum, 1998). According to Naoum (1998), the two types of research strategies exist that is, 'qualitative research' and 'quantitative research'. However, the study, type and information available for the research work determines the particular strategy to adapt (Baiden, 2006). Hence, a quantitative approach consisting of both desktop and field study was adopted. Quantitative research gathers numerical data so as to predict, explain and/or control phenomenon of interest (Polit and Hungler, 1999). Quantitative research is associated with the use of structured questionnaires where response options have been predetermined and a large number of respondents are involved. It can also be regarded as the process of enquiry based on testing a theory composed of variables / numbers and analyzed using statistical techniques / tools. The goal was to develop generalization that contributes to theory that enables the researcher to predict, explain and understand phenomenon. The researcher remains distant and independent of what is being researched. The specific research strategy that was adopted for the study was the case study strategy. Data analysis was mainly statistical; the results of which are numbers or series of numbers presented in tables, graphs or other form of statistical representation.

3.4 SOURCES OF DATA

The study made use of primary data source. The primary function of the survey was to collect information that can be analyzed, to facilitate inference, and assisted the researcher to get original information such as eye witness accounts, personal observations and visits to the project sites to administer interviews and questionnaires.

3.5 RESEARCH INSTRUMENT

Questionnaire form a formal collection of questions used for gathering information from respondents. Frazer and Lawley (2000) indicated that a questionnaire includes set of instruction for its conclusion, response options where appropriate and specific ways for making records of responses. A survey involves a direct gathering of information from respondent(s) whom we are concerned with. The types of information take credit of the individual's or organizations' level of beliefs, knowledge, attitude, choice of preferences, or personalities. Oppenheim (1996) highlighted that questionnaire survey enhances consistency in observations and as well improves repetition as a result of its vital standardized sampling and measurement techniques.

3.6 TARGET POPULATION

The population in research setting refers to the measurement of interest or collection of all possible individuals or objects (Mason *et al*., 1997). Cooper *et al*., (2001) highlighted that population includes all the individuals whom the measurement is being taken. The study population included management professionals involved in procurement in the Cape Coast Metropolitan Assembly such as procurement officers, engineers and quantity surveyors.

3.7 SAMPLING TECHNIQUE AND SAMPLE SIZE

Sample is defined as a finite part of a statistical population whose properties provide information about the whole population (Webster, 1985). Population refers to a group or units of interest located in a geographic area of interest during the time of interest (Taylor-Powell, 1998).

The researcher adopted the snowball sampling technique to locate the management professional involved in procurement in the Cape Coast Metropolitan Assembly as

difficulties were encountered during the assessment of the size of the population. According to Kumar (1996), a snowball sampling technique defines the process of choosing a sample by networking. De Vos (1998) affirmed that, this technique is important in research as it is directed at persons that are hard to recognize. Using the snowball sampling technique, a small number of potential respondents were engaged and then asked if they know any additional respondent with the characteristics that the respondent was looking for in the study.

3.8 DATA ANALYSIS AND STATISTICAL TOOLS

The questionnaires once collected from the respondents were aggregated to give a large unit for the analysis. Two statistical software used in the analysis were Microsoft Office Excel 2016 and Statistical Packages for Social Sciences (SPSS version 17). The findings from the analyzed data were presented in a form of numbers or series of numbers, charts and tables.

Descriptive statistics were first used to analyze the background information on the data collected on the management professionals involved in procurement in the Cape Coast Metropolitan Assembly. Aside the descriptive statistics, relative importance index (RII) used because the extant literature pertaining to the assessment of procurement procedures on project cost performance presents too much surface complexity and thus requires a deeper understanding of the pattern of correlations (covariance) between measures.

Relative Importance Index (RII) = $\frac{\sum W}{AN}$

Where, W = weights given to each factor by the respondents and ranges from 1 to 5, where '1' is very low and '5' is very high.

A = the highest weight (i.e. 5 in this study)

N = the total number of respondents

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

The analysis began using the primary data collected from the respondents. Analysis of responses was done according to the research objectives. The field study was carried out in the Cape Coast Metropolitan Assembly in the Central region to assess the effects of procurement procedures on project cost performance. Tables and charts were used for the analysis. However, a sample of seventy (70) questionnaires were designed and administered to procurement professionals within the Cape Coast Metropolitan Assembly. Out of the 70 questionnaires distributed to the procurement professional, 60 questionnaires representing 85.71% were retrieved.

4.2 DESCRIPTIVE ANALYSIS OF DATA (DEMOGRAPHIC)

This aspect displays background information on respondents such as sex of respondents, years spent in the assembly, highest level of education of respondents, respondent's position in the assembly and respondent's department in the assembly. The other part also details out the analysis of the specific objectives of the study in relation to the effects of procurement procedures on project cost performance in the

Cape Coast Metropolitan Assembly.

4.2.1 Years in Assembly

The intention of this question was to identify the level of experience of the respondents in the Assembly because how long they have been in the Assembly will affect the quality of responses that will be given. Figure 4.1 indicates the number of years of the respondent in the assembly. Respondents were asked to indicate how long they have existed in the assembly. 13 respondents indicated more than 15 years, 15 respondents

indicated between 11-15 years, 11 respondents existed between 6-10 years whilst the majority of the respondents constituting 21 respondents indicated they have existed in the assembly between 1-5 years.

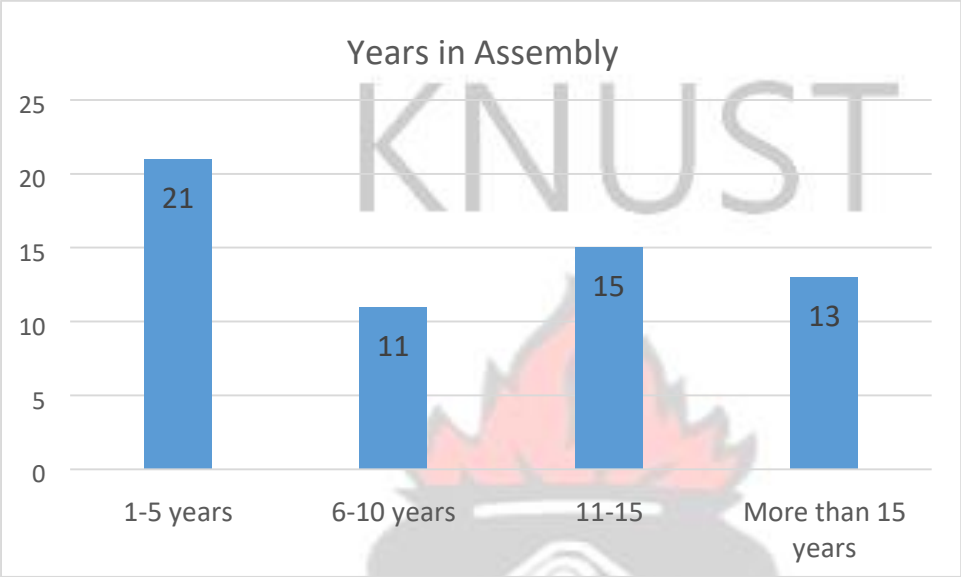

Figure 4.1: Years in Assembly

Source: Survey data, 2016

4.2.2 Highest Qualification

The intention of this question was to identify the highest level of education of respondents because the highest level of education of the respondent will affect the quality of responses that will be given. Figure 4.2 indicates the highest level of education of the respondents. Respondents were asked to indicate their highest level of education. 27% indicated they held MSc. certificates, whilst the majority of the respondents constituting 48% indicated they also held BSc. certificates. However, the remaining 25% of respondents were HND holders.

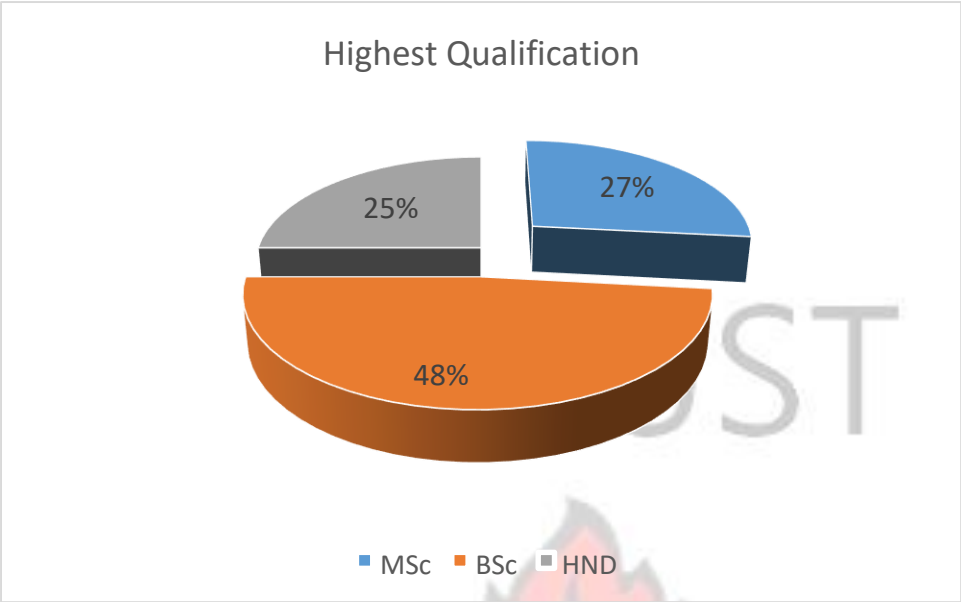

Figure 4.2: Highest level of Education

Source: Survey data, 2016

4.2.3 Position in Assembly

The intent of this question was to identify the various positions respondents occupy within the Assembly. Figure 4.3 established the various positions respondent hold within the assembly and it posits itself to the following interpretation; 12% of the respondents indicated that they were Procurement Officers, 10% of the respondents were Planning Officers and 22% were Engineers. However, majority of the respondents representing 33% indicated they were Management Staff whilst the remaining 23% of the respondents indicated they were Finance Officers.

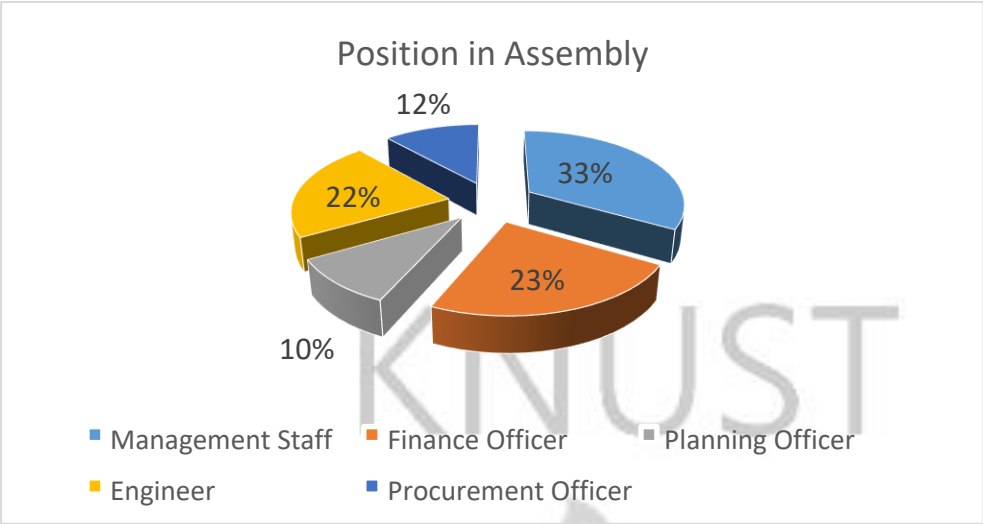

Figure 4.3: Position in Assembly

Source: Survey data, 2016

4.2.4 Departments in the Assembly

Respondents were asked to indicate which departments they belong to in the Assembly. However, majority of respondents constituting 19 respondents indicated they belong to Works department whilst 18 respondents indicated Administration. However, 16 respondents also indicated Finance department and the remaining 7 respondents indicated they belong to Planning department.

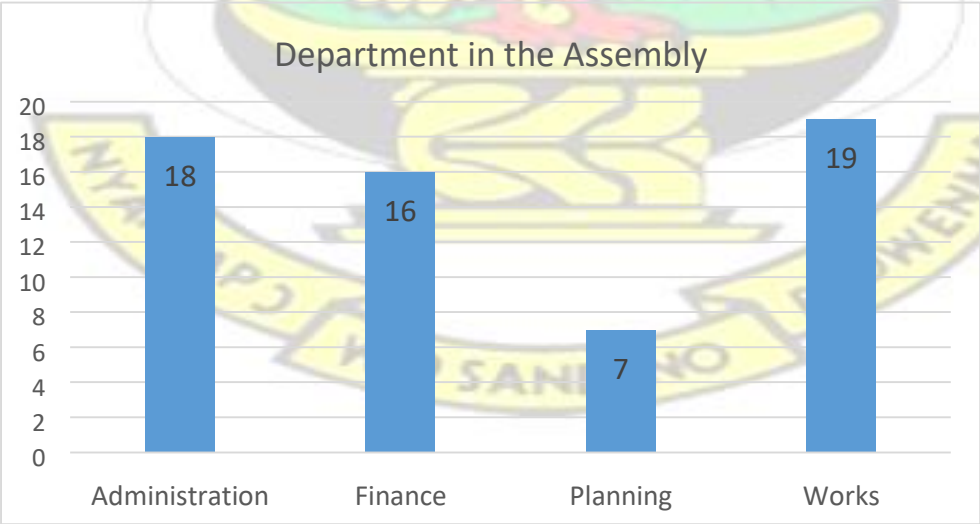

Figure 4.4: Departments in Assembly

Source: Survey data, 2016

4.3 FREQUENCY OF VARIOUS PROCUREMENT PROCEDURES USED ON PROJECTS

Preliminary descriptive analysis such as relative importance index of each of the procurement procedures variables led to aid in providing a vibrant depiction of the outcome of the survey; and the results are tabulated in Table 4.1. With the five-point Likert rating scale, a variable was randomly reflected critical if it had a mean value of 3.50 or more (Field, 2005). From Table 4.1, three of the variables have mean values above the accepted population mean of 3.5, it was therefore rational to deduce that they constitute the most frequently used procurement procedures on projects in the assembly. The highest responsive or frequently used procurement procedure variable from the table is: *open procedure.* Open procedures best suit all kinds of public contracts. Open procedures can take the form of National or International competitive tendering (Public Procurement, 2003, Act 663, Part V Sec.44 and 45). All interested

Tenderers who meet the required criteria as set out clearly inside the contract notice (Advertisement) and the Tender document may submit a tender. Followed by the second highest: *restricted procedure.* For the restricted procedure of tender, contractors who have the right to submit tenders are those that were selected out of the prequalification procedure during participation (Public Procurement Act, 2003). The Public Procurement Bulletin contains contract notices published; it describes the criteria that will be used to select tenderers and the scope of the work. The shortlisted tenderers will be allowed to make submission of a tender as they receive the tender documents. In recommendation, the least number of tenderers that will be selected should not be less than six, in situations where the number of qualified tenderers is sufficient (Public Procurement Act, 2003).

And the third highest variable is: *request for proposals.* According to Section 43 of Public Procurement Act 663 (2003) the RFQ is also referred to as the "shopping". It is founded on the grounds of making comparison of price quotations gotten from at least three suppliers against ensuring competitive prices. The least responsive or frequently used procurement procedure variable is: *Two-Stage Procedure.* This confirms the provision in the Public Procurement Act (2003), Act 663, that open procedure should be used for all public contracts and can take the form of National or International competitive tendering (Public Procurement Act, 2003). Thus, based on the descriptive statistics, it could be confidently concluded that the variables identified as the procurement procedure variables through literature review and the survey indicates the views of the respondents.

Table 4.1: Frequency of various procurement procedures used on projects

	RATING									
PROCUREMENT PROCEDURES	**1**	**2**	**3**	**4**	**5**	**Total**	**∑W**	**Mean**	**RII**	**Rank**
Open Procedure	0	7	8	35	10	60	228	3.8	0.8	1st
Restricted Procedure	2	14	41	3	0	60	228	3.8	0.8	2nd
Request for proposals	4	0	7	45	4	60	225	3.75	0.8	3rd
Request for Quotations (RFQ)	1	8	24	20	7	60	204	3.4	0.7	4th
Negotiated procurement procedure	1	17	29	12	1	60	175	2.92	0.6	5th
Design and Build procurement approach	1	30	19	10	0	60	158	2.63	0.5	6th
Single Source Procedure	9	10	37	3	1	60	157	2.62	0.5	7th
Public Private Partnership (PPP)	7	22	25	6	0	60	150	2.5	0.5	8th
Two-Stage Procedure	1	53	5	1	0	60	126	2.1	0.4	9th

Source: Survey data, 2016

4.4 IMPACT OF PROCUREMENT PROCEDURES ON PROJECT COST PERFORMANCE

The various impacts of procurement procedures on project cost performance have been identified in table 4.2 collected with the mean values of all sixty (60) respondents as well as their respective RII scores. The impacts of procurement procedures on project cost performance were as follows: ensures price competition, enhances transparency, ensures accountability, price certainty, guarantees maximum price, ensures financial stability, reduces project cost, cheaper service provision, maximize cost savings and

minimizes cost overruns. The mean and RII values were calculated for each impact identified. Respondents were asked to rate in their opinion on how stimulating these factors are. A rank was presented for the impacts to show the level of impact of procurement procedures on project cost performance from 'very low' to 'very high'. From the breakdown in table 4.2, *ensures price competition* was the most ranked impact of procurement procedure on by respondents, evident with an RII of 0.85 and mean val**u**e 4.23. This was closely followed by *enhances transparency* and ranked 2nd by respondents with RII of 0.84 and mean value of 4.22. This affirms Carter et al. (2007) assertion that procurement procedures ensure that there is transparency and price competition. *Enhances accountability* was ranked 3rd by respondents with an RII and mean value of 0.79, 3.97 respectively. Procurement procedures ensure that procurement personnel are accountable for procurements conducted and this impacts the cost of the item or service procured (Memom et al., 2010). However, *price certainty* was ranked 4th by respondents with an RII and mean values of 0.76, 3.78 respectively. This is in confirmation to Martinez-Martinez (2008) that procurement procedures help to determine price certainty as well as high levels of improved performance in cost.

Table 4.2: Impact of procurement procedures on project cost performance

	RATING									
IMPACTS	**1**	**2**	**3**	**4**	**5**	**Total**	**∑W**	**Mean**	**RII**	**Rank**
Ensures price competition	0	3	5	27	25	60	254	4.23	0.85	1st
Enhances transparency	1	2	6	25	26	60	253	4.22	0.84	2nd
Ensures accountability	1	2	14	24	19	60	238	3.97	0.79	3rd
Price certainty	0	1	19	32	8	60	227	3.78	0.76	4th

Guarantees maximum price	2	3	31	16	8	60	205	3.42	0.68	5th
Ensures financial stability	1	7	29	17	6	60	200	3.33	0.67	6th
Reduces project cost	8	6	23	19	4	60	185	3.08	0.62	7th
Cheaper service provision	3	19	20	14	4	60	185	3.08	0.62	8th
Maximize cost savings	4	8	35	12	1	60	178	2.97	0.59	9th
Minimizes cost overruns	9	11	19	21	0	60	172	2.87	0.57	10th

Source: Survey data, 2016

4.5 CHALLENGES ASSOCIATED WITH PROCUREMENT PROCEDURES

Table 4.3 revealed that *frequent price changes* was the most ranked challenge associated with procurement procedures by respondents, evident with an RII of 0.89 and mean value 4.47. This was closely followed by *difficulties in processing claims* and ranked 2nd by respondents with RII of 0.70 and mean value of 3.48. This affirms World Bank (1999) assertion that the economic challenges and poor procurement practices resulting in delayed payments and arrears to contractors and consultants and the accrued interest on late payments in addition to the frequent price changes due to expensive renegotiation serve as challenges to the procurement procedure. *Unnecessary delays* was ranked 3rd by respondents with an RII and mean value of 0.79, 3.93 respectively. This confirms Anvuur et al. (2006) assertion that contracts procuring goods make use of lengthy periods to arrive at their financial closure are therefore subjected to unnecessary delays. However, *long payment processes to suppliers* was ranked 4th by respondents with an RII and mean values of 0.78, 3.92 respectively. *Lengthy contract periods* was ranked 5th by respondents with an RII of 0.77 and a mean value of 3.83. However, *lack of commercial edge in procurement exercises* is ranked 6th with an RII

and mean values of (0.77, 3.83). This buttresses Eyiah and Cook (2003) argument that long processes involved in the payment of suppliers and contractors presents serious challenges to the whole procurement process.

Furthermore, *extensive system of controls, reviews and approvals* was also ranked 7th with an RII of 0.76 and mean value of 3.78. *expensive post-award negotiations* was ranked 8th with an RII of 0.71 and a mean value of 3.55. *Delays in evaluation of suppliers* is the least ranked challenge associated with procurement procedures by respondents with an RII of 0.64 and a mean value of 3.22. This indicates that respondents do not view delay in evaluation of suppliers as a critical challenge associated with procurement procedures.

Table 4.3: Challenges associated with procurement procedures

	RATING									
CHALLENGES	**1**	**2**	**3**	**4**	**5**	**Total**	**∑W**	**Mean**	**RII**	**Rank**
Frequent price changes	0	0	7	18	35	60	268	4.47	0.89	1st
Difficulties in processing claims	0	8	4	21	27	60	247	4.12	0.82	2nd
Unnecessary delays	4	0	13	22	21	60	236	3.93	0.79	3rd
Long payment processes to suppliers	0	7	6	32	15	60	235	3.92	0.78	4th
Lengthy contract periods	0	9	11	21	19	60	230	3.83	0.77	5th
Lack of commercial edge in procurement exercises	0	11	19	30	0	60	230	3.83	0.77	6th

Extensive system of controls, reviews and approvals	0	8	6	37	9	60	227	3.78	0.76	7th
Expensive post-award negotiations	3	6	16	25	10	60	213	3.55	0.71	8th
Lack of awareness on procurement markets	4	11	8	24	13	60	211	3.52	0.70	9th
Service providers cutting corners to limit losses	4	12	14	18	12	60	202	3.37	0.67	10th
Delays in preparation of technical specifications	0	23	7	23	7	60	194	3.23	0.65	11th
Delays in evaluation of suppliers	6	13	8	28	5	60	193	3.22	0.64	12th

Source: Survey data, 2016

4.6 PROCUREMENT PROCEDURES THAT BEST IMPROVE PROJECT COST PERFORMANCE

The following procurement procedures have been identified in table 4.4 and also collected with the mean scores of all sixty (60) respondents as well as their RII scores. The following were the procurement procedures specified namely: design and build procurement approach, two-stage procedure, open procedure, restricted procedure, negotiated procurement procedure, request for proposals, public private partnership, single-source procedure and request for quotations.

The mean and RII values were computed for each procurement procedure identified. Respondents were asked to rate their opinion on the influence of procurement procedures on project cost. A rank was presented to depict the influences from ‘very cheap’ to ‘to very expensive’. With the five-point Likert rating scale, a variable was

randomly reflected critical if it had a mean value of 3.50 or more (Field, 2005). Two variables have mean values above the accepted population mean of 3.50, it is therefore rational to deduce that they constitute the procurement procedures that best improve cost. From the analysis in table 4.4, *design and build procurement approach* was 1st most weighted variable obtaining a RII of 0.73 and a mean of 3.65. *Two-Stage procedure* is the 2nd most weighted variable with RII of 0.72 and a mean of 3.60. This affirms Chan et al. (2007) assertion on design and build approach that a successful contractor or supplier enters into contract with a client and are responsible for their own designs, construction and cost proposal thereby eliminating the additional cost of securing designers to produce designs. However, *request for quotations* is the least ranked procurement procedure that improves cost by respondents with an RII value of 0.57 and a mean score of 2.85 although request for quotations ensures price competitiveness (Public Procurement Act, 2003).

Table 4.4: Procurement procedures that best improve project cost performance

	RATING									
PROCUREMENT PROCEDURES	**1**	**2**	**3**	**4**	**5**	**Total**	**∑W**	**Mean**	**RII**	**Rank**
Design and Build procurement approach	0	6	19	25	10	60	219	3.65	0.73	1st
Two-Stage Procedure	0	2	25	28	5	60	216	3.60	0.72	2nd
Open Procedure	7	6	7	31	9	60	209	3.48	0.70	3rd
Restricted Procedure	0	16	26	12	6	60	209	3.48	0.70	4th
Negotiated procurement procedure	0	9	31	13	7	60	198	3.30	0.66	5th
Request for proposals	1	16	19	19	5	60	191	3.18	0.64	6th

Public Private Partnership (PPP)	2	14	29	8	7	60	184	3.07	0.61	7th
Single Source Procedure	1	19	23	13	4	60	180	3.00	0.60	8th
Request for Quotations (RFQ)	0	19	32	8	1	60	171	2.85	0.57	9th

Source: Survey data, 2016

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

Basically, this study assesses the effects of procurement procedures on project cost performance was sorted into five separate but related chapters. The general view of the study was bounded in the first chapter. The review of relevant studies on the subject centered on contextual discussions on procurement, procurement processes and procedures as well as the challenges associated with procurement procedures were reviewed in the second chapter. In the third chapter, the methodology adopted for the studies embracing the research design and strategy were scrutinized. The study plan was executed amid procurement personnel within the Cape Coast Metropolitan Assembly via survey queries. In the fourth chapter, empirical examination and discussions on the outcomes of the study was presented. In this chapter, issues confronted during the study are presented. It starts with an entire summary sum-up of precisely how the study objectives were realized and infers with recommendations acquired from the research and directives for extra investigation that could be executed grounded on the conclusions and restrains of the research.

5.2 ACHIEVEMENT OF RESEARCH OBJECTIVES

In search to determine the diverse crucial variables that relate to this study, a painstaking analysis was performed to identify the distinct factors both interesting and obstructing. The principal purpose of this research, as previously affirmed. The leading aim of this study, as stated earlier, was to assess the effects of procurement procedures on project cost performance. Accordingly, objectives were laid down so as to fulfil the aim.

The findings obtained from the research are summarized in this section.

5.2.1 The First Objective; To identify the various procurement procedures used on projects in the Cape Coast Metropolitan Assembly

Through available literature, background knowledge on procurement procedures was discovered. Furthermore, the various procurement processes were also ascertained. Literature also gave an overview of the construction project procurement systems and also highlighted on the challenges associated with procurement procedures. Literature brought to light project cost performance and the factors that affect project cost performance.

5.2.2 The Second Objective; To identify the impacts of procurement procedures on project cost performance in the Cape Coast Metropolitan Assembly

With the background knowledge on the impacts of procurement procedures on project cost performance acquired from literature, a survey questionnaire was considered to tackle the second objective, ten items were determined which was then verified on a number of procurement personnel in the Cape Coast Metropolitan Assembly. The questions highlighted on impacts such as reduces project cost, cheaper service provision, maximize cost savings, minimizes cost overruns, ensures financial stability, ensures accountability, enhances transparency, price certainty, guarantees maximum

price and ensures price competition. It was seen that the 10 items could be examined applying the same underlying impact. RII was used to rank the impacts and then subsequently discussed.

5.2.3 The Third Objective; To determine the procurement procedures that best improve project cost performance in the Cape Coast Metropolitan Assembly The background knowledge of the procurement procedures gained from literature helped to design a questionnaire to address the third objective, of which 9 variables were identified and then tested on a number of procurement personnel in the Cape Coast Metropolitan Assembly. The questions highlighted on procurement procedures such as open procedure, restricted procedure, two-stage procedure, single source procedure, request for quotation, negotiated procurement procedure, design and build procurement approach, public private partnership and request for proposals. However, it was realized that the variables (i.e. 9 procurement procedures) could be measured using the same underlying effect. Relative Importance Index (RII) was used to rank the factors and then subsequently discussed.

5.3 CONCLUSION

Procurement procedures are very relevant in every organisation so as to ensure cost effectiveness. These procurement procedures have diverse impacts on the cost of projects undertaken. Without adequate procurement procedures, there is high tendency of experiencing project cost overruns. However, most of these procurement procedures improve the cost benefits of executed projects and how often the best procurement procedures are adopted determines how much impact it has on cost.

5.4 RECOMMENDATIONS

The fundamental purpose of this research was to assess the effects of procurement procedures on project cost performance. Accordingly, objectives were laid to aid attain this purpose. On the viewpoint of this research, the subsequent recommendations were hence proposed:

5.4.1 Procurement managers must ensure the adoption of design and build procurement approach so as to minimize and improve cost.

54.2 Prudent measures should be adopted by finance managers and procurement officers of public agencies to minimize unnecessary delays throughout the procurement process.

5.4.3 There should be sensitization on the best procurement procedures that improve cost such as design and build and two-stage procedures.

5.5 DIRECTIONS FOR FUTURE RESEARCH

The study outcomes have established a few areas that need additional investigation work. The following were therefore recommended for future research:

- Further research on challenges of procurement procedures in MMDAs in Ghana.
- Further research on the relationship between procurement procedures and project costs in Ghana.

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APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

COLLEGE OF ART AND BUILT ENVIRONMENT

Department of Building Technology

(MSc. Procurement Management)

Survey Questionnaire

AN ASSESSMENT OF PROCUREMENT PROCEDURES ON PROJECT COST PERFORMANCE: A CASE STUDY OF CAPE COAST METROPOLITAN ASSEMBLY

Dear Sir/Madam

This questionnaire forms part of an MSc. Research project which aims to **assess the effects of procurement procedures on project cost performance.** Procurement procedures have become very relevant in the determination of construction project cost performance in contemporary construction environments. The results of this study will identify the various procurement procedures and their impacts on project cost performance. The results will also determine the best procurement procedures that best improves project cost performance.

I would like to invite you to participate in the above project. Completion of the questionnaire is completely voluntary and returning the completed questionnaire will be considered as your consent to participate in the survey. The questionnaire will take you about 10 minutes to complete.

The data collected will be used purposely for this research and any solutions obtained will be shared for the entire construction indusry.

I appreciate that you are already busy and that participating in this survey will be another task to add to your busy schedule, but by contributing you will be providing important information. **All data held are purely for academic purposes and would be treated as strictly confidential.**

In the event of questions or queries, please do not hesitate to contact me. Thank you for your time and valid contribution in advance.

Yours faithfully,

SYLVESTER DEH
MSc. Researcher

Email: dehsylvesterk@yahoo.com

Tel: 0244429118

SECTION A: RESPONDENT'S PROFILE

Please, kindly respond to the questions by ticking (√) in the appropriate box(s) for each item.

1. Please state the number of years you have been in the Assembly

   - ☐ Less than 1 year
   - ☐ 1 – 5 years
   - ☐ 6 – 10 years
   - ☐ 11 – 15 years
   - ☐ More than 15 years

2. Please indicate highest qualifications (please do not tick **(√) more than two boxes**)

 PhD

 MSc

 BSc

 HND

 Professional qualification…….(please indicate)

 Other……(please indicate)

3. Please indicate your position in the Assembly.

 Management Staff

 Finance Officer

 Planning Officer

 Engineer

 Other …….(please explain further)

4. Please indicate your Department in the Assembly.

 Administration

 Finance

 Planning

 Other ……..(please explain further)

SECTION B: FREQUENCY OF VARIOUS PROCUREMENT PROCEDURES USED ON PROJECTS

1. Please read the following and tick the box that best represents your level of agreement on the frequency of each of the procurement procedures identified.

Use the scale: 1 = Never 2 = Rarely 3 = Sometimes 4 = Very often 5 = Always

ITEM	PROCUREMENT PROCEDURES	1	2	3	4	5
1	Open Procedure					
2	Restricted Procedure					
3	Two-Stage Procedure					
4	Single Source Procedure					
5	Request for Quotations (RFQ)					
6	Negotiated procurement procedure					
7	Design and Build procurement approach					
8	Public Private Partnership (PPP)					
9	Request for proposals					

Please state below any relevant information which you deem necessary

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SECTION C: IMPACT OF PROCUREMENT PROCEDURES ON PROJECT COST PERFORMANCE

1. Below are the impacts of procurement procedures on project cost performance. From your experience, express your opinion on the level of impact on project cost performance. **Use the scale: 1 = Very Low 2 = Low 3 = Moderate 4 = High 5 = Very High**

ITEM	IMPACTS	1	2	3	4	5
1	Reduces project cost					

2	Cheaper service provision					
3	Maximize cost savings					
4	Minimizes cost overruns					
5	Ensures financial stability					
6	Ensures accountability					
7	Enhances transparency					
8	Price certainty					
9	Guarantees maximum price					
10	Ensures price competition					

Please state below any relevant information which you deem necessary

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SECTION D: CHALLENGES ASSOCIATED WITH PROCUREMENT PROCEDURES

1. Below are potential challenges associated with procurement procedures. From your experience, express your opinion on your level of agreement to the following challenges. **Use the scale: 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree**

ITEM	CHALLENGES	1	2	3	4	5
1	Lengthy contract periods					
2	Lack of commercial edge in procurement exercises					
3	Unnecessary delays					
4	Expensive post-award negotiations					
5	Delays in preparation of technical specifications					
6	Delays in evaluation of suppliers					
7	Extensive system of controls, reviews and approvals					

8	Lack of awareness on procurement markets					
9	Long payment processes to suppliers					
10	Service providers cutting corners to limit losses					
11	Frequent price changes					
12	Difficulties in processing claims					

Please state below any relevant information which you deem necessary

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SECTION E: PROCUREMENT PROCEDURES THAT BEST IMPROVE PROJECT COST PERFORMANCE

1. Below are procurement procedures identified to affect project cost performance. Please indicate the influence of the following procurement procedures on project cost performance.

Use the scale: 1 = Very Cheap 2 = Cheap 3 = Moderate 4 = Expensive 5 = Very Expensive

ITEM	PROCUREMENT PROCEDURES	1	2	3	4	5
1	Open Procedure					
2	Restricted Procedure					
3	Two-Stage Procedure					
4	Single Source Procedure					
5	Request for Quotations (RFQ)					
6	Negotiated procurement procedure					
7	Design and Build procurement approach					

8	Public Private Partnership (PPP)					
9	Request for proposals					

Please state below any relevant information which you deem necessary

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Thank you.