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**DEPARTMENT OF BUILDING TECHNOLOGY**

**DEVELOPMENT OF A FRAMEWORK FOR CAPACITY BUILDING OF SME  
BUILDING CONTRACTORS IN GHANA THROUGH PUBLIC PROCUREMENT**

**BY:**

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## DECLARATION

This work or any part thereof has not previously been submitted in any form to the University or to any other body whether for the purpose of assessment, publication or for any other purpose. Taking out expressions, acknowledgements, references and/or bibliographies cited in the work, I confirm that the intellectual content of this work is the result of my own efforts.

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## ABSTRACT

The importance of public procurement in achieving governments' socio-economic objectives in both developed and developing countries are widely acknowledged among policy makers, professionals, and the academia. One of such objectives that governments have sought to use procurement to achieve is building the capacity of their local industries, especially those in the SME categories. The construction industry in Ghana is made up of a significant number of smaller construction firms and ensuring their effective capacity building will contribute enormously to the economy. Again, considering the government as a major stakeholder in the Ghanaian construction industry, a lot can be achieved if government uses its procurement to help build the capacities of these construction firms. However, there is a dearth in literature with regards to the use of public procurement for capacity building in the Ghanaian construction industry. This research work therefore sought to develop a framework for capacity building of SME Building Contractors (SMEBCs) in Ghana through public procurement. The specific objectives of the research included: identification of significant factors affecting the capacity of SMEBCs in Ghana; identification of public procurement policies and strategies that inure to building the capacity of SMEBCs; and development of a framework for establishing public procurement policies and strategies to enhance the capacity of SME Building Contractors in Ghana. The study employed both qualitative and quantitative data collection techniques. Data obtained through the questionnaire survey were analysed using descriptive statistics (percentages), one sample t-test, and factor analysis. The study revealed the following as factors affecting the capacity of SMEBCs in Ghana: delay in payment for work done, limited access to credit, non-payment of interest on delayed payments, and lack of fair competition. In addition, the study revealed the following public procurement to be relatively important for capacity building of SMEBCs in Ghana: strict adherence to payment schedules;

streamlining procurement procedures to make them more transparent and standard; encouraging collaborations among various stakeholders; joint venture arrangements; and subcontracting arrangements. The framework for capacity building of SMEBCs was developed using the findings from the literature review, semi-structured interviews, and questionnaire survey and by employing key concepts of problem solving methodology. The study has made recommendations which, if adopted, will help build the capacity of SMEBCs in Ghana. The content of the research work is expected to be of interest to major stakeholders of public procurement, particularly public procurement entities such as Ministries, Departments, Agencies (MDAs), and District Assemblies (DAs).

**Keywords:** Capacity Building, Ghana, Public Procurement, SME Building Contractors, Procurement Policies, and Strategies

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## DEDICATION

This thesis is dedicated to all my family members, especially my uncle, Mr Joseph Baffour Asamoah.



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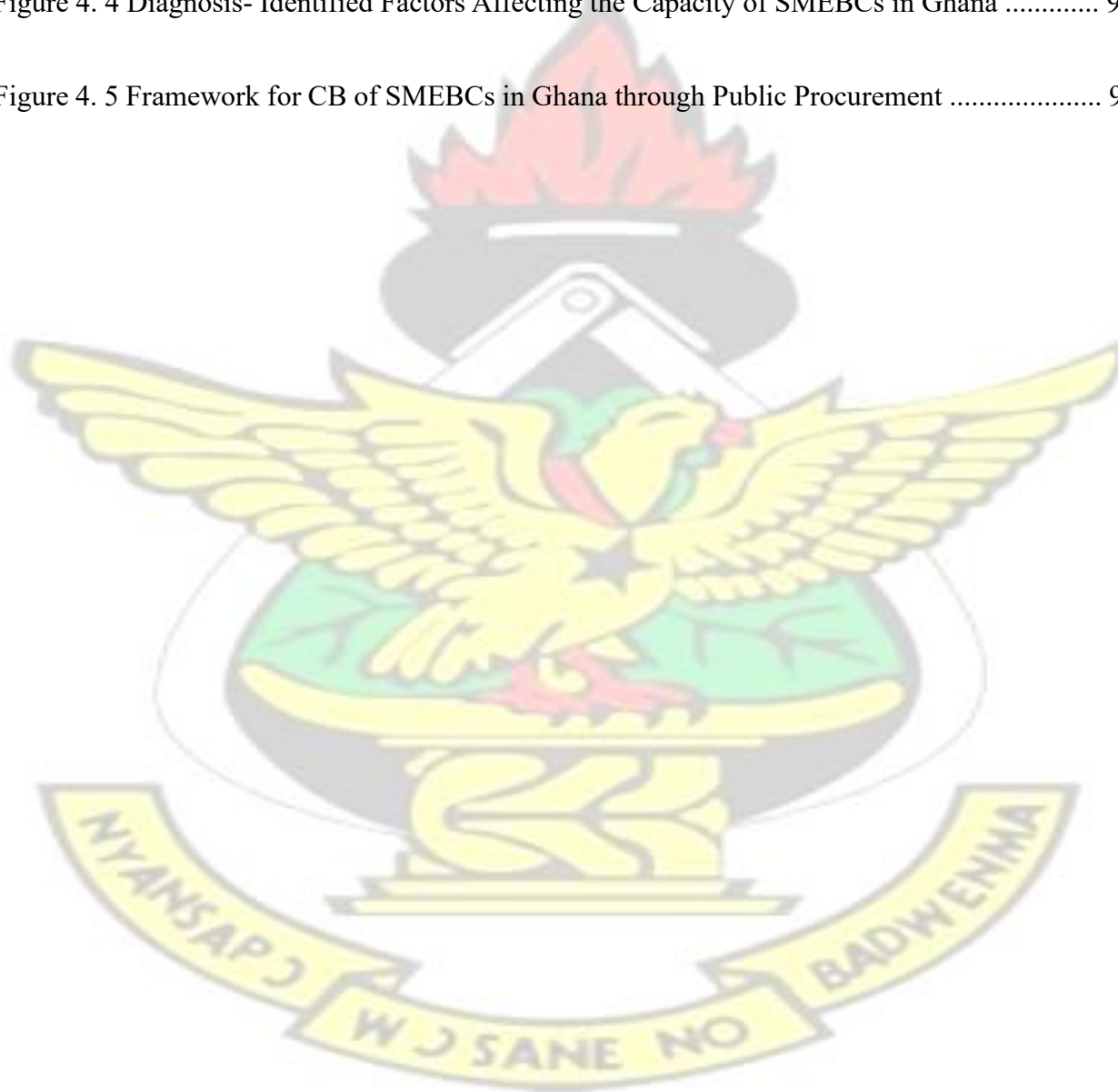


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## LIST OF ABBREVIATIONS

<b>ABCECG</b> .....	Association of Building and Civil Engineering Contractors of Ghana
<b>BCA</b> .....	Building Construction Authority
<b>CB</b> .....	Capacity Building
<b>CI</b> .....	Construction Industry
<b>CIDA</b> .....	Construction Industry Development Authority
<b>CIDB</b> .....	Construction Industry Development Board
<b>CST</b> .....	Closed Systems Theory
<b>DAs</b> .....	District Assemblies
<b>EC</b> .....	European Commission
<b>FDIs</b> .....	Foreign Direct Investments
<b>GDP</b> .....	Gross Domestic Product
<b>GCI</b> .....	Ghanaian Construction Industry
<b>GFCF</b> .....	Gross Fixed Capital Formation
<b>GNP</b> .....	Gross National Product
<b>GST</b> .....	General Systems Theory
<b>LCIMU</b> .....	Local Content Implementation/Monitoring Unit
<b>L.I</b> .....	Legislative Instrument
<b>MDAs</b> .....	Ministries, Departments, Agencies
<b>MWRW&amp;H</b> .....	Ministry of Water Resource, Works and Housing
<b>OPST</b> .....	Open Systems Theory
<b>PPA</b> .....	Public Procurement Authority
<b>PCA</b> .....	Principal Component Analysis
<b>PPP &amp; Ss</b> .....	Public Procurement Policies and Strategies
<b>SMEs</b> .....	Small and Medium-sized Enterprises
<b>SPSS</b> .....	Statistical Package for Social Science
<b>UNCTAD</b> .....	United Nations Conference on Trade and Development
<b>UNDP</b> .....	United Nations Development Programme

**UNESCO**.....United Nations Educational, Scientific, and Cultural Organisation

**UNIDO**.....United Nations Industrial Development Organisation

*List of Abbreviations*

**VRA**.....Volta River Authority





## **CHAPTER ONE**

### **GENERAL INTRODUCTION**

#### **1.1 BACKGROUND OF THE STUDY**

The importance of public procurement in facilitating government operations in both developed and developing countries is widely acknowledged among policy makers, professionals, and the academia (Osei-Owusu & Gyapong, 2013). Indeed, public procurement has become the vehicle by which a sizeable proportion of economic activity is transacted in Ghana, representing 17% of GDP in the year 2007 (Public Expenditure and Financial Accountability , 2009). According to the year 2003 World Bank Economic Report on Ghana, public procurement accounts for 50-70% of the national budget (after personnel emoluments) (Osei-Tutu, et al., 2011). This underscores the power and relevance of public procurement in the Ghanaian economy. This purchasing power can be harnessed by the government of Ghana, just like governments of other countries to achieve socioeconomic development goals (McCrudden, 2004). This is in line with the two main roles governments play in their economies, that is, participating in the market as purchasers and at the same time regulating the market through the use of its purchasing power (McCrudden, 2004). Generally, procurement is the process which creates, manages, and fulfils contracts relating to the provision of goods, services and construction works or disposals, or any combination thereof (*c.f.* Watermeyer, 2012). In this light, public procurement can be used to achieve the socio-economic development goals of a nation such as developing the small and local businesses (Watermeyer, 2004; McCrudden, 2004).

A major part of government's expenditure since Ghana gained her independence in 1957 is construction works as the government spends a lot of money in the provision of infrastructure in the various sectors of the country (Ampadu-Asiamah & Ampadu-Asiamah, 2013). This is because the physical infrastructure, built through the various construction activities, is the nation's economic backbone as it forms the arteries for the facilitation of productive activities by enabling goods and services to be distributed within and outside the country (Ofori, 2012). This explains why the bulk of the expenditure programmes of Ministries, Departments, Agencies (MDAs) and District Assemblies (DAs) of the Republic of Ghana involve capital construction procurement (Anvuur, et al., 2006). It must however be noted that exploiting the activities and outcomes of the Ghanaian Construction Industry (GCI) towards an anticipated socio-economic progress cannot be predicated upon a fragile developmental framework and ill-equipped industry (Badu & Owusu-Manu, 2010; Ahadzie, 2009). Thus, the capacity of the local construction firms in the GCI need to be built enough in order for them to serve public demand adequately.

In Ghana, both building and civil engineering contractors are respectively classified under categories D1, D2, D3, D4 and K1, K2, K3, K4 by the Ministry of Water Resources, Works and Housing (MWRW&H) in collaboration with the Registrar General's Department (Amoah, et al., 2011; Agyepong, 2012). This classification is done with reference to factors such as annual turnover, equipment holding, and personnel. Thus, the D1K1 class of contractors are regarded as larger firms, whereas D2K2 construction firms are medium and D3K3 and D4K4 are small firms (*c.f.* Danso, 2010; Amoah et al, 2011). By this classification, firms in each category could tender for building contracts within a certain financial threshold (Badu, et al., 2012). In the context of this study, SMEs in the GCI are defined as firms within D4K4, D3K3, and D2K2 categories. A lot of studies have been conducted in Ghana that have identified and proposed solutions for the challenges that face the construction industry (Ahadzie, 2009; Badu & Owusu-Manu, 2010; Laryea, 2010;

Danso, 2010; Amoah, et al., 2011). Notwithstanding, most of the writers have largely focused on relatively larger construction firms than the smaller construction firms (even though, the small scale construction firms constitute a larger proportion of the number of firms in the construction industry) (Amoah, et al., 2011). Research has it that 90% of registered contractors belong to the lower classes in Ghana (van Egmond & Erkelens, 2007). This corroborates the assertion that small firms account for over 90% of all construction firms in virtually all countries (Amoah, et al., 2011). Regardless of the sizes of these SME Building Construction firms, they collectively contribute significantly to the overall construction GDP, especially in the development of decentralised and local government areas (*ibid*).

It is important to note that in spite of the significance of the construction industry, with regard to national socio-economic development, construction firms, particularly those that belong to the SME categories are faced with a raft of challenges that affect their capacity (Anaman & Osei-Amponsah, 2007; Amoah, et al., 2011). These factors affecting the capacity of SME Building Contractors (SMEBCs) in the GCI include political, financial, managerial, harsh business environment, and business growth (Donkor, 2011; Amoah, et al., 2011; Laryea, 2010; Badu & Owusu-Manu, 2010; Kheni, 2008). These challenges that face the Ghanaian construction industry in general and the SMEBCs in particular go to affect their competitiveness, and their survival in business. Some writers and contractors have therefore called upon the government to institute measures that can help build the capacity of the firms in the GCI, particularly the SMEBCs in order for them to be kept in business and contribute to the socio-economic development, employment generation, and poverty alleviation of the country (Donkor, 2011; Amoah, et al., 2011; Laryea, 2010; Ofori, 2012). While leveraging public procurement is potentially a powerful instrument for governments to consider as a means for building the capacities of their local industries, it has hitherto been insufficiently explored in most developing and emerging economies such as Ghana (UNCTAD,

2013). This study therefore explores how public procurement can be leveraged for capacity building (CB) of the construction firms in the GCI, particularly the SMEBCs.

## **1.2 PROBLEM STATEMENT**

Small and medium-sized building construction firms, just like the larger construction firms in all countries at various development levels are beset with several challenges that affect their capacity (Amoah, et al., 2011; Ofori & Toor, 2012). The construction firms in Ghana, particularly the SME building contractors face several challenges in relation to financing for projects, harsh business environment, health, and safety issues (Laryea, 2010; Badu & Owusu-Manu, 2010; Ofori & Toor, 2012). Whereas these challenges that are faced by the construction firms are not unique to those in the developing economies, their effect is arguably more serious (Ofori, 2007).

The small and medium scale contractors in Ghana, as a result of these challenges are not able to develop enough in order to provide the infrastructural needs of the country and also contribute significantly in terms of employment in the informal sector as it should (Donkor, 2011; Amoah, et al., 2011). The construction firms are less competitive and their very survival in business is threatened.

The Public Procurement Act (PPA) 663 was enacted in the year 2003 to serve as a framework for public procurement in Ghana. One of the functions of the PPA, as captured under Section 3 (t) is to assist the local business community to become competitive and efficient suppliers to the public sector. However, since its enactment, a little over a decade ago, there are no clear policy guidelines on how public procurement can be used for the development of local businesses, particularly the SMEBCs in the GCI. Besides, there is a dearth in literature that seeks to find how public procurement can be leveraged for capacity building of SMEBCs in the GCI. It is against this

backdrop that this research seeks to find how public procurement can be harnessed for capacity building of SMEBCs in Ghana.

### **1.3 RESEARCH QUESTIONS**

In view of the problem statement above, this research work seeks to answer the following questions:

1. What are the factors that affect the capacity of SME Building Contractors in the GCI?
2. What are the public procurement policies and strategies that can help build the capacity of SME Building Contractors in the GCI?

### **1.4 AIM OF THE RESEARCH**

The aim of the research was to develop a framework for capacity building of SME Building Contractors in Ghana through public procurement.

### **1.5 OBJECTIVES**

To achieve this aim, the following objectives were set out:

- To identify factors that affect the capacity of SME Building Contractors;
- To identify public procurement policies and strategies that inure to building the capacity of SME Building Contractors; and
- To develop a framework for establishing public procurement policies and strategies to enhance the capacity of SME building contractors in Ghana.

## **1.6 SIGNIFICANCE OF THE STUDY**

Acknowledging the significant role SMEs play in the socio-economic development of developed and developing countries, many researchers, and organisations have explored how public procurement can be used for their SMEs' development (Kayanula & Quartey, 2000). Some of these research works and publications include Perry (2011), Booth (2013), and Watermeyer (2004). However, these works are based on country-specific procurement regimes and requirements (Watermeyer, 2004) and for that matter the methods employed to develop their SMEs through procurement may not be directly applicable in other countries such as Ghana. Hence, this research seeks to empirically ascertain how public procurement can be used to contribute to building the capacity of SMEBCs in Ghana.

Also, the study contributes to the debate of using public procurement to address socio-economic goals of Ghana for a sustainable development. This is by advancing an understanding of how public procurement can be used to build the capacity of SMEBCs. The various findings were also encapsulated into developing a framework for capacity building of SMEBCs in Ghana through public procurement which can be used by the various public procurement entities (particularly public clients such as Ministries, Departments, Agencies (MDAs) and District Assemblies (DAs)) to contribute to the capacity building of SMEBCs.

## **1.7 SCOPE OF THE STUDY**

Ghana's public procurement covers goods, works, and services. However, this research work focused on how public procurement can be used to build the capacity of SMEBCs in the construction industry. Again, most Ghanaian contractors and consultants/ procurement professionals tend to operate officially in the Greater Accra region (Ahadzie, 2007; Donkor, 2011;

Fugar & Agyakwah-Baah, 2010). For this reason, contractors and consultants/ procurement professionals in this region were considered for the study

## **1.8 RESEARCH METHODOLOGY**

The research questions sought to elicit views of how public procurement can be harnessed to build the capacity of SMEBCs in Ghana. Owing to this, both primary and secondary data were collected. The secondary source of data used has been collected from relevant literature, databases, and internet sources in order to evaluate the general theoretical bases of knowledge level of the use of public procurement for capacity building of SMEBCs. The primary data employed both exploratory (qualitative research) and descriptive (quantitative) survey methods, involving a two-phased datacollection approach. The first phase employed qualitative research approach which involved the use of semi-structured interviews to identify potential factors affecting the capacities of SMEBCs and Public Procurement Policies and Strategies (PPP & Ss) that inure to building the capacity of the SMEBCs in Ghana. In this regard, seven (7) major stakeholders (including the Public Procurement Authority; Architectural Engineering Services Limited; the Association of Building and Civil Engineering Contractors in Ghana (ABCECG); Ministry of Water Resources Works and Housing; and prominent consultants who are involved in construction works procurement in Ghana) were purposefully selected for the interview. The various responses were then transcribed and subsequently analysed using Hyper-Research software.

The second phase adopted the quantitative approach: descriptive study by the use of constructs generated at the exploratory survey stage in designing questionnaires, which were pre-tested and distributed to 125 professionals involved in procurement of construction works (mainly, Quantity Surveyors, Procurement Managers, and Project Managers) who work with public client organisations, consultancy firms, and contractors (who are in the D2/ K2, D3/ K3, and D4/K4

categories). Out of the distributed 125 questionnaires, 80 were retrieved, representing 64%. Again, using a five-point rating scale, the respondents were asked to rate the levels of significance of the factors affecting the capacity of SMEBCs in Ghana; the level of importance of the various public procurement policies and strategies (PPP & Ss) for capacity building of SMEBCs. Statistical Package for the Social Science (SPSS) was used in analysing the data that was obtained through the questionnaire survey. Data obtained were analysed using descriptive statistics (percentages), one sample t-test, and factor analysis.

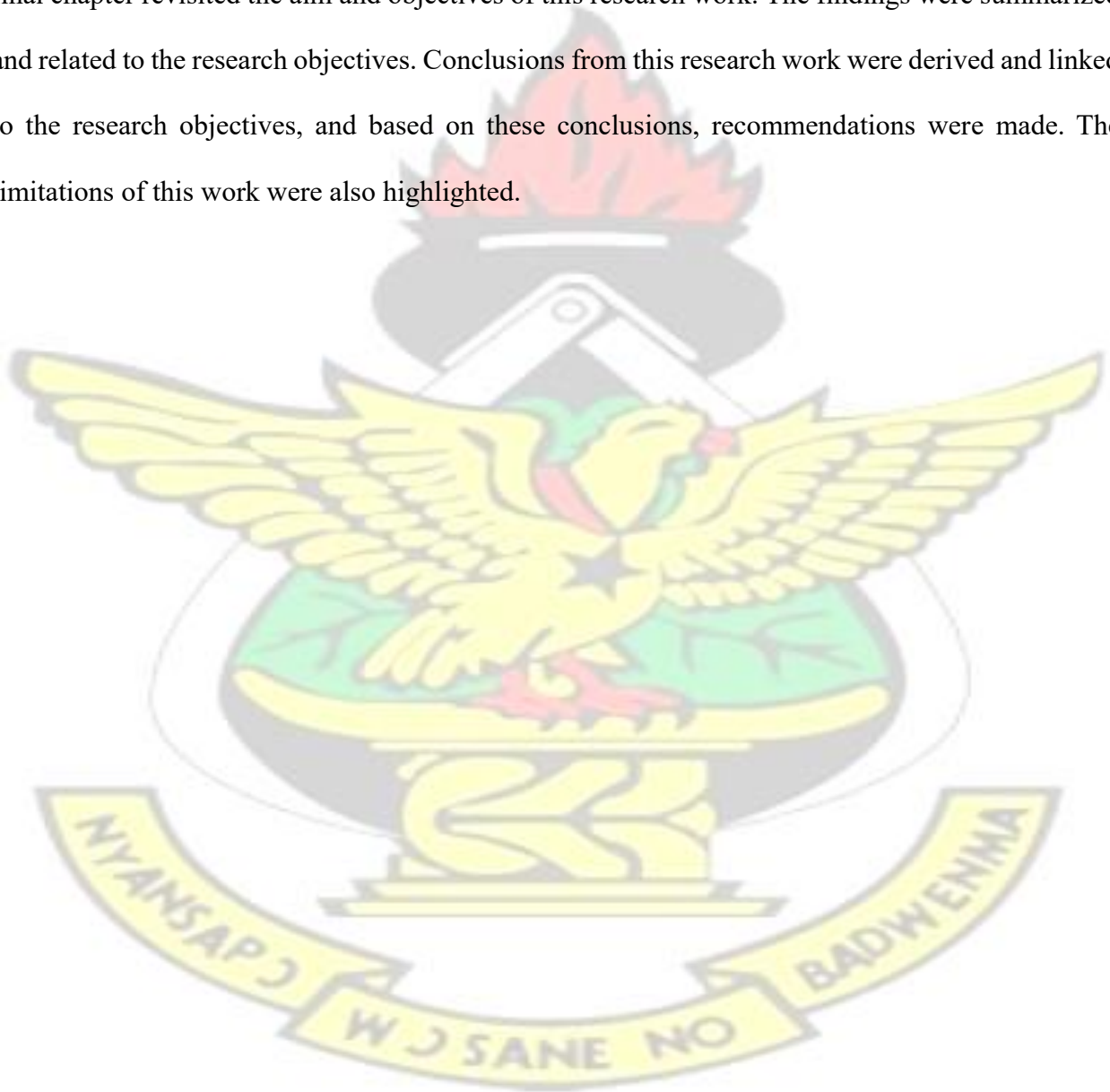
Apropos the development of the proposed framework for capacity building of SMEBCs through public procurement, the results of the analysed data of the study were organised with the principles of problem solving methodology. The framework was subsequently validated using semi-structured interviews.

## **1.9 STRUCTURE OF THE THESIS**

This research work was made up of five chapters which covered the introduction, literature review, research method, empirical research (analysis or data presentation), and conclusions and recommendation. The various chapters and what they entailed have been briefly presented as follows: Firstly, chapter one (1) gave the reader the background information of the study. The problem statement, the aim and objectives, and the methodology of the research have been presented in this chapter. In chapter two (2), there was a review of extant literature on the subject was conducted. The concepts of public procurement, capacity building, and SMEBCs were elucidated. This comprised the significance of public procurement and SMEBCs in the socioeconomic development of nations, particularly Ghana. Again, the potential factors affecting the capacity of construction firms, particularly SMEBCs and PPP&S for CB were elaborated. The third

(3<sup>rd</sup>) chapter generally discussed and justified the research strategy and data collection techniques.

It covered a description of the research methods used in this study, and focused on the methods that were used in conducting the empirical research, framework for the study and research design and data analysis techniques that were employed. Chapter four (4) reported on data analysis, the presentation and analysis of results. It also answered the various questions raised by the objectives. The final chapter revisited the aim and objectives of this research work. The findings were summarized and related to the research objectives. Conclusions from this research work were derived and linked to the research objectives, and based on these conclusions, recommendations were made. The limitations of this work were also highlighted.



## **CHAPTER TWO**

### **PUBLIC PROCUREMENT AND SME BUILDING CONTRACTORS IN GHANA**

#### **2.1 INTRODUCTION**

The preceding chapter gave the background, aim, objectives, and the scope of the study. This chapter however, presents a review of literature that is germane to the subject of public procurement and SME Building Contractors. The chapter begins by defining what is meant by public procurement in the context of the study. This is then followed by throwing light on the significance of public procurement in the world at large and Ghana in particular. The chapter also discusses the significance of the construction industry in Ghana, SME Building Contractors and the factors that affect their capacity. To begin with, light is shed on public procurement and its significance in the various economies at various development levels particularly, Ghana, the focus of the study.

#### **2.2 DEFINITION OF PROCUREMENT**

Procurement has gained much interest from several stakeholders including practitioners, researchers, and the various policy makers. Generally, procurement is defined as acquisition of goods, works, and/or services from supplier, being it an individual or an organization (Kalubanga, 2012). It includes acquiring new services or products and includes contract strategy, contract documentation and contractor selection, while extending to all members of the supply chain, for example those responsible for operation and maintenance (Humphrey, 2005). Based on the model definition by van Weel (2002) as cited by Kalubanga (2012), the procurement process encapsulates:

- *sourcing (planning: needs identification and assessment, supplier selection);*

- *contracting;*
- *monitoring and evaluation; and*
- *expediting*

Indeed, procurement may be done by private or government entities. Yet, for the purposes of this study, the focus is on procurement made by or on behalf government. Governments all over the world have received significant attention as providers of essential services such as health, education, defence, and infrastructure where they meet these demands by purchasing goods and services from the marketplace (Odhiambo & Kamau, 2003). Government purchases are referred to as public procurement which is broadly defined as the purchasing, hiring or obtaining by any other contractual means of goods, construction works, and services by the public sector (*ibid*). It must be noted that public procurement is a much regulated arena and for that matter most of the various definitions stem out of legal frameworks (Thai, 2001; Lloyd & McCue, 2004; Odhiambo & Kamau, 2003). Indeed, this can be partly attributed to the inherent political sensitivity of the area (Schapper, et al., 2006). Traditionally, public procurement has been noted as being a structured, sequential way of buying (Lloyd & McCue, 2004). Lloyd & McCue (2004) reveal that there are several definitions of public procurement. However, all the definitions and roles established for public procurement include the following activities or responsibilities:

- *Planning procurement actions;*
- *Publicizing upcoming solicitations;*
- *Preparing and issuing solicitations;*
- *Evaluating bids, proposals, and quotations;*
- *Conducting bid openings or negotiations;*
- *Analysing contractor capabilities;*
- *Awarding contracts;*

- *Monitoring contractor performance;*
- *Modifying contracts;*
- *Extending or terminating contracts; □ Closing out completed contracts; and*
- *Evaluating contractor past performance.*

As it has been indicated above, public procurement covers goods, services, and works. However, in this research work, public procurement of construction works is the focus.

### **2.2.1 Public Procurement of Construction Works in Ghana**

The government of Ghana does procure for construction works through its agencies namely, the Ministries, the Assemblies, Departments, Institutions and other agencies (Gyadu-Asiedu, 2009). The government as a client is represented by the Ministry of Road and Transport (for road works) and the Ministry of Water Resources, Works and Housing in giving out projects (*ibid*). Public procurements must be done in accordance with the rules and regulations of the national procurement law as stipulated in the Public Procurement Act (2003) (Act 663). As defined by the (Public Procurement Act (2003) (Act 663), works include work associated with the construction, reconstruction, demolition, repair or renovation of a building or structure or surface and includes site preparation, excavation, erection, assembly, installation of plant, fixing of equipment and laying out of materials, decoration and finishing, and any incidental activity under a procurement contract. The main procurement arrangement is the traditional competitive bidding (Anvuur , et al., 2006). The client makes sure the needed funds are available whiles upon professional advice and designs (Usually Architects, Quantity Surveyors, Project Managers and other consultants), a suitable contractor is appointed to execute and complete a given project (Gyadu-Asiedu, 2009). The consultants make sure that the objectives of the project are met with the client and contractors fulfilling their respective parts of the contract.

### **2.3 SIGNIFICANCE OF PUBLIC PROCUREMENT**

The relevance of public procurement in facilitating government operations in both developed and developing countries are now widely acknowledged among policy makers, professionals, and the academia (Osei-Owusu & Gyapong, 2013). The items that are considered in public procurement range from simple goods or services such as clips or cleaning services to large commercial projects, such as the development of infrastructure, including road, power stations and airports (Odhiambo & Kamau, 2003). Indeed, Schapper *et al.* (2006) consider public procurement as being inherently a politically sensitive activity in that it involves significant amounts of public money even within the context of a national economy. This is because governments are significant buyers of goods and services in all countries, as public procurement world over represented approximately \$2,000 billion (representing, 7% of the world's GDP and 30% of the world's merchandise) (Bashuna, 2013). It is also estimated that public procurement represents about 16.3% of the combined EU-15 GDP (Edler & Georghiou, 2007). Indeed, it is further estimated that public procurement accounts for 9-13% of the GDP of economies of developing countries (Bashuna, 2013). Again, research has it that public procurement accounts for 70% of public spending, 40% in Malawi, 58% in Angola, 70% of Uganda's public spending (Bashuna, 2013). What is more, in Kenya, 60% of government revenue is spent on public procurement, while representing 50-70% of the nation-wide budget of Ghana, after personal emoluments (Osei-Tutu, et al., 2011; Akech, 2005). In Ghana, public procurement has become the vehicle by which a sizeable proportion of economic activity is transacted, representing 17% of GDP in the year 2007 (Public Expenditure and Financial Accountability, 2009).

These aforementioned percentages of public procurement expenditure underscore the significance of public procurement in the individual countries and the world at large. According to Watermeyer (2004), because of the nature and size of public procurement, it can be a substantial stimulus on

social and economic development, making governments in both developed and developing economies use procurement to realise policy objectives in various ways, from making it mandatory for officials to use procurement to accomplish specific socio-economic objectives to ruling out its use for such purposes. Indeed, in both developed and developing countries, disregarding their economic, social, and political environment, a sound procurement system apparently has two groups of goals, vis-à-vis procurement and non-procurement goals (Thai, 2001). Thai further explains that the procurement goals normally include quality, timeliness, value, minimizing business, financial and technical risks, maximizing competition, and maintaining integrity whereas, non-procurement goals normally include economic goals (preferring domestic or local firms), environment protection or green procurement (promoting the use of recycled goods), social goals (assisting minority and woman-owned business concerns), and international relations goals.

Studies have shown that the portion of public expenditure that is attributable to purchases of goods and services has been the subject of significant recent attention because of its absolute scale (Brammer & Walker, 2007). The growing discussion on the research and policy front has been the use of public procurement as a stimulus for achieving a number of important issues including the tendency of using public procurement to relatively favour local companies with possible impacts on efficiency and effectiveness, the growing importance of collaborative partnerships between the private and public sectors, and the processes of tendering and contracting for government contracts often in the context of particular products or service (Brammer & Walker, 2007; McCrudden, 2004; Astbrink & Tibben, 2013; UNCTAD, 2013). Again, in Ghana, His Excellency John Dramani Mahama, the President of the Republic of Ghana stated during the State of the Nation's Address (2014) that

*“.....Government will also use its financial muscle to boost the Ghanaian private sector. Their success is everybody's success. Their prosperity is one that will ultimately benefit the entire nation.*

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*Ghanaian registered companies that are up to date in their corporate obligations would be given preference in bids.....Value for money and quality will not be compromised in the process” (State of the Nation's Address, 2014).*

This implies that the use of public procurement to build the capacity of local industries and make them much competitive in the Ghanaian market is acknowledged in the highest echelon of power. Indeed, the decision to utilize its financial muscle to boot the indigenous enterprises is apt, particularly at this time that many developing nations have the desire to use their natural resources to lift themselves out of poverty (Esteves & Barclay, 2011). However, in the realms of academic research in Ghana, there is a dearth in literature that seeks to find how public procurement can be used for this purpose.

A major part of government's expenditure since Ghana gained her independence in 1957 is construction works as the government spends a lot of money in the provision of infrastructure in the various sectors of the country (Ampadu-Asiamah & Ampadu-Asiamah, 2013). Indeed, a substantial aspect of the expenditure programmes of Ministries, Departments, Agencies (MDAs) and District Assemblies (DAs) of the Republic of Ghana involve capital construction procurement (Anvuur , et al., 2006). This represents an approximate annual value of public procurement for goods, works, and consultant services amount to US\$600 million, that is about 10% of the country's GDP (Gyadu-Asiedu, 2009). Hence, it can be assumed that if the government's 'financial muscle' is directed at boosting the capacity of the local construction industry particularly the SMEBCs, a lot can be achieved in terms of creating employment opportunities and alleviating poverty in the country (Amoah, et al., 2011). The focus of this research is to empirically ascertain how public procurement can be used for capacity building of SMEBCs in Ghana.

## **2.4 SIGNICANCE OF THE GHANAIAAN CONSTRUCTION INDUSTRY**

In the global context, the construction industry is regarded as one of the most fragmented industries, with an estimated annual global construction output closer to U.S \$ 4.5 trillion in 2004 (Khan, 2008). The construction industry is defined as a group of firms with closely connected activities involved in the construction of real estates, building, private and public infrastructure (Danso, 2010). It also covers all economic activities that are concerned with the creation, renovation, repairs or extension of fixed assets in the form of buildings, land improvements of an engineering nature and other such engineering constructions such as roads, bridges, railways, ports, dams (Khan, 2008).

The Ghanaian construction industry comprises a large number of firms of various sizes as registered and categorised by the Ministry of Water Resources, Works, and Housing (MWRW&H) in collaboration with the Registrar General's Department (Amoah, et al., 2011; Danso, 2010; Agyepong, 2012). The categorisation places building construction companies under category D, and civil engineering companies under category K (Agyepong, 2012). It has financial sub-classes, namely: 1, 2, 3, and 4, based on their financial capacity, labour holding and expertise as well as plant holdings of the companies (*ibid*). The existing classification is made up of D1K1, D2K2, D3K3 and D4K4 (Amoah, et al., 2011; Danso, 2010; Agyepong, 2012). The D1K1 class of contractors are considered as larger firms, whereas D2K2 construction firms are medium and D3K3 and D4K4 are small firms (Badu & Owusu-Manu, 2010; Amoah, et al., 2011). The larger firms, according to MWRW&H are registered as financial class 1, capable of undertaking projects of any value, class 2 (the medium firms) are capable of undertaking projects up to US\$500,000.00, while the small firms (financial class 3) are also capable of undertaking projects up to US\$200,000.00 or class 4 to undertake projects up to US\$75,000.00 (Danso, 2010; Agyepong, 2012).

By this classification, firms in each category could tender for building contracts within the various financial thresholds (Badu, et al., 2012). Research has shown that the majority of contractors in many construction industries fall in the small and medium-size range and do not export their services outside their countries (Dlungwana & Rwelamila, 2004). Typically, the construction industry contains a small number of relatively large firms with a very large number of quite small firms (Egbu, 2000). The fragmentation of the construction industry reflects the economics of production, encouraging small firms organised by trade or craft. Construction firms typically involve relatively low capital investment with a relatively low barriers to entry and exit of firms within the construction industry (*ibid*).

According to Osei (2013), the key players in the construction sector are as follows:

- *The Client Community – both public and private sectors;*
- *The Design Community;*
- *The Supply Chain – Materials Suppliers, Machinery Manufacturers, Sub-assemblers;*
- *Main Contractors and Sub-Contractors of every tier;*
- *Universities and technological institutions and Professional associations.*
- *Economic drivers such as Banks and other financial corporations; and*
- *Trade Unions, including regulation and standards authorities.*

It is acknowledged that the government is a major user and consumer of the built environment in the form of infrastructure, housing, and tertiary buildings (Osei, 2013). Therefore, the government can change the levels of its expenditure in construction to effect desired changes in the economy (Ofori, 2012).

Research has shown that the construction industry contributes greatly to the development of the Ghanaian economy. It does so by contributing significantly to the GDP and creating employment opportunities for many individuals in the country (Danso, 2010). In addition, Ayarkwa *et al.* (n.d)

*Chapter Two: Public Procurement & SME Building Contractors in Ghana* acknowledges the importance of the construction industry by describing it as a locomotive sector of the national economy and that factors that affect the development of the industry affect the nation at large. The construction industry plays an important role in the socio-economic development of every nation, and in providing employment, especially for the least skilled members (Ofori, 2007; Ofori, 2012). There has been statistical prove of a positive relationship between gross national product (GNP) per capita and the percentage of value added in construction; the percentage of gross fixed capital formation (GFCF) and investment in construction; and the creation of employment in construction (Tokuori, 2010).

The Bank of Ghana reported in the year 2009 that the construction industry of Ghana accounted for 10% of Ghana's GDP and remains as one of the major routes for generating or creating new wealth and value to meet other economic and social goals in Ghana (Ahiaga-Dagbui, et al., 2011). In the same vein, Osei (2013) revealed that the construction sector remains as one of the key sectors in the economy in terms of its share of GDP (that is, 9.1% for 1993- 2011 period) and the overall industrial output (that is 35.9% for 1993-2011 period). Again, it is expected that the discovery of oil in commercial quantities, a massive flow of capital, both domestic and foreign, is expected to be attracted to undertake the necessary infrastructure in Ghana, where the construction industry is projected to grow at an unprecedented a rate of 13.0% (*c.f.* Amoah, et al., 2011).

According to Kheni (2008), labour intensive methods, typically employed in the construction industry in developing countries including Ghana, also makes it most appealing for implementation of government policies relating to job creation.

#### **2.4.1 General Definition of SMEs**

There are a number of definitions that do exist to describe SMEs (Kayanula & Quartey, 2000). These definitions for classifying SMEs vary from sector to sector, as well as from country to country

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depending on the purposes those definitions are required to serve and the policies which govern the SME sector (Kayanula & Quartey, 2000; Ayanda & Laraba, 2011; Ayyagari, et al., 2007; Kheni, et al., 2008). Ayyagari *et al.* (2007) also revealed that the definition of an SME on the basis of a specific criterion is not uniform across countries. They stated for an example, a specific country may define an SME to be an enterprise with less than 500 employees, while another country may state the cut-off to be 250 employees. These definitions can be largely grouped into two, “economic” and “statistical” definitions ( Underhill Corporate Solutions, 2011; Kayanula & Quartey, 2000). According to Underhill Corporate Solutions (UCS) (2011), under the economic definition, a firm is regarded as small if it meets the following three criteria:

- *It has are relatively small share of their market place;*
- *It is managed by owners, or part owners, in a personalised way and not through the medium of a formalised management structure; and*
- *It is independent in that it is not part of a larger enterprise.*

The UCS Report indicates that the statistical definition is used in three main areas:

□

*Quantifying the size of the small firm sector and its contribution to GDP, employment and exports;*

- *Comparing the extent to which the small firm sector's economic contribution has changed over time; and*
- *In a cross-country comparison of the small firms' economic contribution.*

This definition is in accordance with the definition given by the Bolton Committee (Kayanula & Quartey, 2000). Again, Van der Wijn (1989) as cited in Cofie (2012) considers small and medium firms as privately held firms with 1–9 and 10–99 people employed, respectively. There have been several criticisms against these definitions taking for instance, the economic definition, which states that a small business is managed by its owners or part owners in a personalised way and not through the medium of a formal management structure, is irreconcilable with its statistical definition of a small manufacturing firm which might have up to 200 employees ( Underhill Corporate Solutions, 2011; Kayanula & Quartey, 2000). However, the British Department of Trade and Industry, the best description of a small firm remains that used by the Bolton Committee in its 1971 Report on Small Firms (Abor & Quartey, 2010). Indeed, the main distinguishing feature is size, as determined by number of employees, paid up capital or turnover, and capital investment on plant and machinery as the categorisation (Ayanda & Laraba, 2011; Ofori & Toor, 2012). However, the danger of using the size of a firm in the classification of SMEs has been expressed by some writers as in some sectors all firms may be regarded as small, whilst in other sectors there are possibly no firms which are small (Kheni, 2008). Again, in defining SMEs, the European Commission (EC) (2003) recommended that for a firm or an entity to qualify as an SME, the firm must find data on the following:

□

- *Staff headcount;*
- *Annual turnover; and*
- *Annual balance sheet.*

According to the EC, the information on the above data is needed for a much clearer classification of the firm under the SME umbrella. In the following table, the various thresholds of SMEs according to EC's revised definition of SMEs are shown.

**Table 2. 1 New Thresholds for SMEs adopted by EC**

ENTEPRISE CATEGORY	HEAD COUNT ANNUALWORK UNIT	ANNUAL TURNOVER	ANNUAL BALANCE SHEET
Medium	< 250	≤ €50 million	≤ €43 million
Small	<50	≤ €10 million (In 1996 €7 million)	≤ €10 million (In 1996 €5 million)
Micro	<10	≤ €2 million (Previously not defined)	≤ €2 million (Previously not defined)

Source: (European Commission, 2003)

Again, according to Elaian (1996) as cited in Abor and Quartey (2010), UNIDO defines SMEs in terms of number of employees by giving different classifications for industrialized and developing countries.

The definition for industrialized countries is given as follows:

- *Large - firms with 500 or more workers; □ Medium - firms with 100-499 workers; and*
- *Small - firms with 99 or less workers.*

The classification given for developing countries is as follows:

- *Large - firms with 100 or more workers;*

□

- *Medium - firms with 20-99 workers;*  
*Small - firms with 5-19 workers; and*
- *Micro - firms with less than 5 workers.*

Generally, SMEs are characterized by informal management styles, lean management structures, and absence of bureaucratic procedures (Kheni, 2008). The above information depicts the general definitions of SMEs in other jurisdictions, however, Section 2.4.2 focuses on the Ghanaian situation which is the focus of this study.

#### **2.4.2 SME Definition in the Ghanaian Context**

Many construction SMEs carry out their work in the formal and informal sectors, with those in the formal sector having formal relationships with their clients than those in the informal sectors (Kheni, 2008). According to Kayanula and Quartey (2000), the SMEs in Ghana have been defined differently by several authors according to the focus of their studies, however, the most commonly used criterion is the number of employees of the enterprise. Osei *et al.* (1993) as cited in Abor & Quartey (2010) grouped small-scale enterprises into three categories, thus:

- *Micro - employing less than 6 people;*
- *Very small - employing 6-9 people; and*
- *Small - between 10 and 29 employees.*

Kheni *et al.* (2008) in the study of “Health and safety management in developing countries: a study of construction SMEs in Ghana”, defined SMEs as family-run domestic contractors with the following thresholds relating to medium, small and micro construction businesses:

- *An upper threshold of 199 employees and a lower threshold of 30 employees are adopted for medium-sized construction businesses;*

□

- *Small businesses are ones that employ 10–29 persons; and*

*Micro businesses are construction businesses whose number of employees does not exceed nine.*

Indeed, there are other writers who defined SMEs in the construction sector based on the classifications of the MWRW&H. The MWRW&H's classification is based on the firms' financial standing, equipment holding, staff strength, legal organization, and age since incorporation (Badu & Owusu-Manu, 2010). Amoah *et al.* (2011) defined small-scale building contractors as building contractors in the D3 and D4 categories. Again, asserting that contractors in the financial classes 2, 3, and 4 have similar characteristics, Eyiah and Cook (2003) consider contractors in those categories as SME contractors. This definition is adopted for the research.

## **2.5 CAPACITY OF SME BUILDING CONTRACTORS**

### **2.5.1 Definition of Capacity Building of SME Building Contractors**

#### **2.5.1.1 Definition of capacity**

The term capacity is used in several contexts with deferent meanings depending on the message that is sought to be conveyed (Morgan, 2006; Enemark, 2003). The Oxford Advanced Learner's Dictionary defines capacity as "The ability to understand or do something". UNESCO (2006) however makes the definition much specific. It thus defines capacity as the ability of individuals, organisations, or systems to perform appropriate functions effectively, efficiently and sustainably. Morgan (2006) contextualized the concept of capacity by suggesting five of its characteristics. These characteristics have been presented below:

□

- *Capacity is about empowerment and identity, properties that allow an organization or system to survive, to grow, diversify, and become more complex. To evolve in such a way,*

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*systems need power, control, and space. Capacity has to do with people acting together to take control over their own lives in some fashion.*

- *Capacity has to do with collective ability, that is that combination of attributes that enables a system to perform, deliver value, establish relationships and to renew itself.*
- *Capacity as a state or condition is inherently a systems phenomenon. Capacity is an emergent property or an interaction effect. It comes out of the dynamics involving a complex combination of attitudes, resources, strategies, and skills, both tangible and intangible. It emerges from the positioning of a system within a particular context. And it usually deals with complex human activities which cannot be addressed from an exclusively technical perspective.*
- *Capacity is a potential state. It is elusive and transient. It is about latent as opposed to kinetic energy. Performance, in contrast, is about execution and implementation or the result of the application/use of capacity. Given this latent quality, capacity is dependent to a large degree on intangibles. It is thus hard to induce, manage, and measure. As a state or condition, it can disappear quickly particularly in smaller, more vulnerable structures. This potential state may require the use of different approaches to its development, management, assessment and monitoring.*
- *Capacity is about the creation of public value. All countries, regardless of their level of development, have many examples of effective capacity that subverts the public interest. The most obvious would be organized corruption, the behaviour of gangs and organized conspiracies, and the capture of public institutions. In most countries, different kinds of capacities compete for power, control, and resources.*

According to Kululanga (2012), the term capacity relates to the abilities, skills, knowledge, learning attitudes, values, relationships, behaviours, motivations, resources and conditions that enable individuals, organisations, institutions and systems to carry out functions effectively, efficiently and innovatively so that they can achieve their development objectives. For the purposes of this research work, capacity will be referred to as the technical knowhow, managerial skills and financial strength that is required by a firm in order to meet its client's demand effectively and efficiently.

#### **2.5.1.2 Definition of capacity building**

The term capacity building has no singular definition (Enemark, 2003; UNESCO, 2006; Morgan, 2006). Its usage is usually directed at achieving a specific objective. According to UNESCO (2006), capacity building/development is a process by which individuals, groups, organisations, institutions, and societies increase their ability to:

- a) Perform core functions, solve problems, define and achieve objectives; and*
- b) Understand and deal with their development needs in a broad context and in a sustainable manner*

With regard to the UNESCO's definition of capacity building, the focus is on the individuals, groups, organisations, institutions and societies increasing their own ability to perform and do things in the required manner. This is however different from a definition given by the UNDP in its 1991 Briefing paper which defines capacity building as:

- The creation of an enabling environment with appropriate policy and legal frameworks; □ Institutional development, including community participation (of women in particular); and*
- Human resources development and strengthening of managerial systems.*

(UNDP, 1991). In this definition, apart from the individuals, groups, organisations, institutions and societies increasing their own ability to perform and do things in the required manner, an enabling environment also needs to be created in order for them to thrive. Again, by inferring from the Agenda 21 (1992), capacity building refers to developing the strengths of individuals, organisations, and governments for them to be able to achieve their specific goals. Kululanga (2012) asserts that capacity building involves various approaches and strategies which seek to improve performance. In the context of the construction industry, capacity building can be defined as the conscious and managed process that optimises the contribution of the construction industry in meeting national construction demand, in promoting national social and economic development objectives, industry performance and competitiveness, and improved value to clients and society (*c.f.* Kululanga, 2012). In this regard, the capacity building is considered as an all-embracing approach to developing the construction industry of which the involvement of all the relevant stakeholders (including the public and private sector clients, built environment professionals, constructors, materials manufacturers and suppliers, training delivery institutions, regulatory bodies and research institutions) is a *sine qua non* (Kululanga, 2012).

In studying the capacity building of the construction industry, Kululanga (2012) conceptualised it from systems approach with a number of levels. He argues that capacity building strategies for the construction industry solutions can be considered from systems perspective with an acknowledgement of the dynamics and interrelationships among various determinants at different levels. In the context of this research, capacity building is adapted to mean the creation of an enabling environment in Ghana through policies and strategies for SMEBCs to build their capacities. This is for the SMEBCs to function effectively and efficiently to meet the demands of their clients.

### **2.5.2 Importance of Capacity Building to SME Building Contractors in Ghana**

In spite of the significance of the construction industry of Ghana, it is faced with a raft of challenges that make the various construction companies less competitive against their foreign counterparts (Laryea, 2010). Laryea (2010) noticed that the market for major projects in developing countries tends to be dominated by foreign contractors, where in Nigeria for instance, a study found that major projects in most developing countries are carried out by foreign contractors because of deficiencies in indigenous contractors' capacity. In Ghana also, inadequate capacity of the local construction firms is one of the main reasons given by Government for awarding major projects of national interest to foreign firms (Ahiaga-Dagbui, et al., 2011). Notwithstanding, a long history has it that African countries have a lot of problems in their industries, which have culminated into a drastic shrinkage of the total number of local contractors' market share (Dlungwana & Rwelamila, 2004).

It is worth noting that the issue of inadequate capacity of local construction firms pervades the Ghanaian construction industry, from relatively larger construction firms to the relatively smaller construction firms. However, Ofori and Toor (2012) assert that this situation is much pronounced in the SME construction firms than their larger counterparts. There is therefore the need to build the capacity of these firms for them to be much competitive, in that building the capacity of SMEs is an important step towards improving the performance of the construction industry since even large firms emerge from SMEs (Komu, et al., 2012).

Again, it is expected that the discovery of oil in commercial quantities will attract investments for infrastructural projects in Ghana, where the construction industry is projected to grow at an unprecedented a rate of 13.0% (*c.f.* Amoah, et al., 2011). However, exploiting the activities and outcomes of the Ghanaian construction industry (GCI) towards an anticipated socio-economic progress cannot be founded upon a fragile developmental framework and ill-equipped industry

(Badu & Owusu-Manu, 2010; Ahadzie, 2009). Thus, the local construction firms in the GCI need to be developed enough in order for them to serve the public demand adequately. Ahadzie (2009) asserts that this can be achieved by aligning decision making to the existence of a well thought-out Construction Industry Development Agenda (CIDA).

There is also the need to build the capacity of SMEBCs on the grounds that they form a very large proportion of the construction industry, representing over 90% of the construction firms in the country as indicated by van Egmond and Erkelens (2007). For this reason, when the capacity of this group of firms in the industry is built, it will have a very significant catalytic effect on developing the construction industry as a whole.

Flowing from the significant contributions the construction industry (particularly the small construction firms) makes towards the socio-economic development of the country in terms of employment generation and infrastructural development, the need for a conscious approach towards its development/ capacity building cannot be over emphasized (Ofori, 2012; Amoah, et al., 2011; Dlungwana & Rwelamila, 2004; Ofori, 2000). Indeed, there has been a growing interest by researchers into finding and elucidating the ways in which the capacity of the firms in the GCI can be improved for them to be competitive and to survive. For instance, van Egmond and Erkelens (2007) studied technology and knowledge transfer for capability building in the Ghanaian construction industry. Badu and Owusu-Manu (2010) also studied how access to construction finance can be improved in Ghana by empirically describing the constraints and antidotes. Again, Fugar, *et al.* (2013) also studied the human capital theory by looking at its implications for the Ghanaian construction industry development or capacity.

Whiles admitting that all these studies have focused on the construction industry of Ghana, most of them have focused on the relatively larger construction firms than the smaller firms (Amoah, et al.,

2011). Again, to the best of the knowledge of the researcher, none of the studies have looked at how the capacity of the local construction industry, particularly the SMEBCs can be built through public procurement empirically. This is notwithstanding the fact that some studies in Ghana have acknowledged public procurement can be improved to engender the capacity of GCI (Donkor, 2011; Badu & Owusu-Manu, 2010). The following section (Section 2.5) is directed at finding the factors that affect the capacity of SMEBCs from extant literature.

## **2.6 FACTORS AFFECTING THE CAPACITY OF SMEBC(S)**

Regardless of the acknowledged significant contributions small construction firms make to the economy in terms of employment, the challenges faced by these firms can be overwhelming (Amoah, et al., 2011). A study conducted by Donkor (2011) reveals that the determinants of business failure in the perspective of SMEBCs in the Ghanaian construction industry are; suspension of projects of previous government, delay in collecting debts from new political heads, financial demands from political heads, non-payment of interest on delayed payments, assigning incompetent project leader at the site, lack of access to capital, undervaluing of work done, change in government policies, low profit margin due to competition, delay in collecting payments, frauds/pilfering, lack of material control systems, poor monitoring and control, poor estimation practices, awarding contracts to incompetent political party members, poor tendering/selection procedure, high and unstable inflation and national slump in the economy.

In a related study that sought to find the factors that affect the performance of small construction firms in Ghana, Amoah *et al.* (2011) empirically revealed that the factors can be grouped under fiscal policies, and managerial capacity. In that study, it was revealed from literature that chronic delay in the payments of contractors for work done, lack of credit facilities for firms, poor

communication structures and an unreliable material supply base are some of the factors that can affect the performance of small building contractors in Ghana. That notwithstanding, the productivity of SMEBCs has been shown to be hampered by laid down procedures, delayed payments and resource constraints (Kheni, 2008). Besides, Kheni asserts that stiff competition that is faced by these SMEs go a long way to hamper their growth and hence their capacity. Research has shown that delay in payment has been identified as the severest factor constraining the finances of contractors (Eyiah, 2003), hence, their financial capacity. In South Africa, another African country like Ghana, accesses to markets; credit; skills; and supportive institutional arrangements have been identified as the basic constraints to the development in the small business sector (Govender & Watermeyer, 2000).

Bakar, *et al.* (2012) also identified factors of management and product quality, human factor, and customer orientation as the most significant factors that affect the turnover growth for construction companies. It has been reviewed in literature that about three decades ago, chronic delay in the payments of contractors for work done, lack of credit facilities for firms, poor communication structures and an unreliable material supply base, technical capabilities, high inflation rates are potential factors that can affect the capacity of small scale building contractors (Eyiah & Cook, 2003; Amoah, et al., 2011). Indeed, Cook and Nixon (2000) assert that most surveys have identified a plethora of factors that inhibit the capacity of smaller firms to include access to finance, poor managerial skills, lack of training opportunities and the high cost of inputs. Laryea (2010) asserts that contractors in the small and medium bracket in most developing countries have limited access to funding sources which prevents them from satisfying the financial requirements (e.g. bid and performance bonds) needed to win major contracts often awarded to their foreign counterparts.

It has been noted that high tendering costs worsens the plight of SMEBCs in that several criteria must be met in order for a tender to be compliant with bidding requirements, compelling owner/managers to develop strong friendship networks as tools for dealing with state bureaucracy (Kheni, 2008). Kheni stresses this point by revealing that the average number of documents required in order for a contractor to submit a tender that meets bidding requirements is in the region of 15 to 25. Indeed, competitive tendering, as contained in the Public Procurement Act, 2003 (Act 663), has become the usual way of procuring physical development projects in the public sector because of requirements of transparency and accountability in the management of public finance (Anvuur , et al., 2006). This is likely to result in under-pricing by many SMEs in a bid to win contracts and subsequently not performing upon award of a public contract (Kheni, 2008). Research has also revealed that delays with interim and final payments, as well as onerous contract conditions faced by construction firms, can also impose a very significant challenge on the SME building contractors (Thwala & Phaladi, 2009). Thwala and Phaladi (2009) in their findings reveal that lack of financial management; lack of entrepreneurial skills; lack of proper training; lack of resources; lack of technical skills, lack of contractual and managerial skills; late payment for work done which are common with government contracts; inability to get credit from suppliers and fronting for established contractors are also contributing factors for the failure of emerging contractors in South Africa, a developing country like Ghana.

It must be noted that the various factors that affect the capacity of the SMEBCs are not in isolation as each one of them may directly or indirectly lead to another. For instance, financial constraints impact upon the firms in satisfying plant and equipment capacity (Egbu, 2000; Thwala & Phaladi, 2009). Indeed, building the capacity of SMEs has become a concern of many developing countries including Ghana (Komu, et al., 2012). This is at the wake of acknowledging that the capacity

challenges of SMEBCs need to be addressed by the various stakeholders and governments collectively (Amoah, et al., 2011; Komu, et al., 2012).

**Table 2. 2: Summary of the factors affecting the capacity of SMEBCs**

<b>FACTORS</b>	<b>AUTHORS</b>
<ul style="list-style-type: none"> <li>• Suspension of projects of previous government;</li> <li>• Delay in collecting debts from new political heads;</li> <li>• Financial demands from political heads;</li> <li>• Non-payment of interest on delayed payments;</li> <li>• Assigning incompetent project leader at the site;</li> <li>• Lack of access to capital;</li> <li>• Undervaluing of work done;</li> <li>• Change in government policies;</li> <li>• Low profit margin due to competition;</li> <li>• Delay in collecting payments;</li> <li>• Frauds/pilfering;</li> <li>• Lack of material control systems;</li> <li>• Poor monitoring and control;</li> <li>• Poor estimation practices;</li> <li>• Awarding contracts to incompetent political party members;</li> <li>• Poor tendering/selection procedure; and</li> <li>• High and unstable inflation</li> </ul>	Donkor (2011)
<ul style="list-style-type: none"> <li>• Long laid down procurement procedures;</li> <li>• Delayed payments and resource constraints; and</li> <li>• Competitive tendering, high tendering costs</li> </ul>	Kheni (2008)
□ Delay in payments	Eyiah (2003)
□ Limited access to finance	Laryea (2010)
<ul style="list-style-type: none"> <li>• Access to finance problems;</li> <li>• Poor managerial skills;</li> <li>• Lack of training opportunities; and</li> <li>• High cost of inputs</li> </ul>	Cook & Nixson (2000)
<ul style="list-style-type: none"> <li>• Delays with interim and final payments,</li> <li>• Onerous contract conditions,</li> <li>• Lack of financial management;</li> <li>• Lack of entrepreneurial skills;</li> <li>• Lack of proper training;</li> <li>• Lack of resources;</li> <li>• Lack of technical skills,</li> <li>• Lack of contractual and poor managerial skills;</li> </ul>	Thwala & Phaladi (2009)

Source: Author's literature review

(Table 2.2 Continued)

<b>FACTORS</b>	<b>AUTHORS</b>
<ul style="list-style-type: none"> <li>• <i>Late payment for work done;</i></li> <li>• <i>Inability to get credit from suppliers; and</i></li> <li>• <i>Fronting for established contractors</i></li> </ul>	(Thwala & Phaladi, 2009)
<ul style="list-style-type: none"> <li>• <i>Chronic delay in the payments of contractors for work done;</i></li> <li>• <i>Lack of credit facilities for firms;</i></li> <li>• <i>Poor communication structures; and</i></li> <li>• <i>Unreliable material supply base</i></li> </ul>	<p><i>Eyiah &amp; Cook (2003);</i></p> <p><i>Amoah et al (2011)</i></p>

Source: Author's literature review

## 2.7 CONSTRUCTION INDUSTRY DEVELOPMENT INITIATIVES

The challenges facing the construction industry in most countries in Africa are almost the same as those in Ghana (Gyadu-Asiedu, 2009). However, most of these countries in Africa upon acknowledging the challenges facing their construction industries have taken steps to address them by forming dedicated agencies to administer the continuous improvement of the industry, although these agencies have different objectives, responsibilities and levels of authority (Ofori, 2000). According to Gyadu-Asiedu (2009), Ofori (2000), and the Ministry of Works of Tanzania (2003), the construction industry development is a conscious and managed process to improve the capacity and effectiveness of the industry to meet the national socio-economic demand for buildings and other physical infrastructure facilities, and to support sustainable national economic and social development objectives, while ensuring:

- 1) *Increased value for money to industry clients as well as environmental responsibility in the delivery process;*
- 2) *The viability and competitiveness of domestic construction enterprises; and*

- 3) *Optimization of the role of all participants and stakeholders through process, technological, institutional enhancement and through appropriate human resource development.* Indeed, in South Africa for instance, the Construction Industry Development Board (CIDB) was established in 2000 as a statutory body to provide leadership to stakeholders and to stimulate sustainable growth, reform and improvement of the construction sector for effective delivery and the industry's enhanced role in the country's economy (Ntuli & Allopi, 2013). According to Ntuli and Allopi (2013), the CIDB has proposed development programmes that are driven by clients and established contractors for selected contractors where it is anticipated that it will lead to fewer but sustainable businesses, especially at the grade one level.

In Ghana, however, there is no central agency with legislative backbone to promote and enforce the advancement of skills, experience and professionalism in the Ghanaian construction industry, neither is there any compulsion on firms and contractors to undertake continual development of their employees (Fugar, et al., 2013). It is for this reason that calls for a Construction Development Board for Ghana is apt and urgent, following successful examples in other countries: the National Construction Council (NCC) of Tanzania, the Building Construction Authority (BCA) of Singapore and the Construction Development Boards (CIDB) of Malaysia and South Africa (Gyadu-Asiedu, 2009; Ahadzie, 2009; Fugar, et al., 2013).

## **2.8 PUBLIC PROCUREMENT POLICIES AND STRATEGIES FOR CB OF SME(S)**

Owing to the acknowledgement of the significant scale of public procurement as pointed out in Section 2.1 of this chapter, procurement has been seen as an important policy tool that can help in achieving socio-economic policy goals (Brammer & Walker, 2010). Indeed, governments of various countries use a variety of strategies of public procurement to achieve socio-economic development

objectives (Astbrink & Tibben, 2013). In September 2006 for instance, the European Commission issued a strategic innovation policy paper highlighting the importance of public procurement for innovation and the creation of lead market, especially in sectors in which the state is an important purchaser (van Rijn, 2005; Edler & Georghiou, 2007).

Astbrink and Tibben (2013) argue that governments, by virtue of their spending power, represent significant players in various economies world over and can influence the availability and costs of goods and services. They further assert that governments are able to do this by virtue of the various roles they play as buyers of goods and services, suppliers of services, and regulators. Accordingly, each of these leads to the possibility that economies of scale may emerge from public procurement that will eventually flow to the general market (*ibid*). Indeed, the use of public procurement to engender the growth of local industries and businesses has gained prominence in policy circles around the globe (Watermeyer, 2004; UNCTAD, 2013). It is suggested that the following public procurement strategies can be used to improve SMEs access to public procurement opportunities for instance (Perry, 2011). These are:

- 1) *Facilitating access to frameworks;*
- 2) *Unbundling of contracts;*
- 3) *Improving access to information;*
- 4) *Simplifying the procurement process;*
- 5) *Setting proportionate requirements;*
- 6) *Encouraging collaboration; building capacity; and*
- 7) *Setting targets for the proportion of contracts awarded to SMEs*

The World Bank views competition as the basis for economic and efficient procurement. However, each borrower (that is, those who are below a specified per capita threshold) is permitted by the Bank to give preference to bids for works contracts from eligible domestic contractors in order to

encourage the development of domestic industries (Watermeyer, 2004). Uniformity in tender and contract documentation is also seen to promote and /or result in effective participation by SMEs and new entrant / emerging contractors; cost efficiencies, both in financial and human resource terms; the simplification of the documentation process; the mechanisation of administration procedures; and savings in cost and improvement in quality (Govender & Watermeyer, 2000). Schapper, *et al.* (2006) also agree to this assertion by stating that bidding documentation should be standardized across government in order that SME contractors do not have to undertake an expensive learning of the process, agency by agency. They argue that inconsistencies in documentation create uncertainty amongst suppliers as to what agencies are actually seeking, and often require bidders to provide similar information repeatedly but in slightly different formats.

In South Africa for instance, the Department of Public Works used targeted procurement procedures to implement a preferential procurement policy that is embedded in their constitution which is aimed at overcoming past discrimination arising from the system of apartheid (Watermeyer, 2004). He further asserts that this intervention increased the market share of small businesses that were owned, managed and controlled by black persons from approximately 2.5% of the Department's budget for public works, immediately prior to implementation, to 22.3% after the first 9 months after implementation and to 32.4% in its third year of operation, with nominal direct financial premiums. This shows the impact the strategy has had on those targeted small businesses. Again, in the United Kingdom, the Government has pledged to promote small businesses through its spend on procured goods and services by setting a target that 25% of central government contracts should be awarded to small and medium sized enterprises (SMEs) by 2015 (Booth, 2013).

In Tanzania, it is reported that the Public Procurement Regulatory Authority (PPRA) has made other interventions such as simplifying tender condition, waving the requirement for submission of

performance bond or guarantee for work up to TAS 100,000,000; simplifying condition for collateral; exclusive preference for local firms; and margin of preference (Komu, et al., 2012). Again, Materu (2001), identifies some of the recommendations that have been made to develop the capacity of local construction firms in Tanzania. It is recommended that as far as practicable, big public projects should be packaged into small lots which can be managed by local contractors, unregistered contractors should not be allowed to tender, procurement procedures need to be streamlined to make them more transparent and standard, donors should be persuaded to relax conditions to enable local contractors to participate in their projects. Indeed, the nexus between public procurement and business policy is especially evident and has been adopted by several countries, including Canada, Korea, and the USA, with explicit legislative preference given to domestic and small business suppliers to government (Schapper, et al., 2006).

In a recent publication, Esteves and Barclay (2011) revealed that resource companies are also employing a range of procurement interventions that are directed at increasing local business access to contract opportunities. They write that these strategies include assigning higher preference weightings to local businesses in competitive bidding processes; sole sourcing arrangements with local suppliers; price matching (where local suppliers are allowed to match the price of other suppliers); dividing large contracts into smaller ones (unbundling) to create opportunities for smaller local suppliers; requiring non-local suppliers to sub-contract locally or to enter joint ventures with local suppliers; providing technical and management training and mentoring; and linking local businesses to other service providers and agencies that promote technological innovation and provide access to finance. These strategies seek to give the suppliers/ contractors access to contracts and then also build their technical and managerial competencies. Indeed, Eyiah

(2003) suggested other areas that could be explored to possibly facilitate access to work by SMEBCs are subcontracting and joint ventures. Eyiah suggested these without actually looking at the possibility of inculcating for example subcontracting into public procurement. In a recent research by Komu, *et al.* (2012), it was revealed that the capacity of SME contractors can be built through work packaging; Subcontracting; Simplifying tender conditions; waving the requirement for submission of performance bond or guarantee for work up to a given threshold; simplifying condition for collateral; exclusive preference for local firms and margin of preference. In their research, it was realised that some local contractors who worked under larger as subcontractors were able to progress from the lower level of contractor classification of their country to a much higher level of classification.

**Table 2. 3: Summary of Public Procurement Policies and Strategies for CB**

<b>PROCUREMENT POLICY OR STRATEGY</b>	<b>AUTHORS</b>
<ul style="list-style-type: none"> <li>• <i>Facilitating access to frameworks;</i></li> <li>• <i>Unbundling of contracts;</i></li> <li>• <i>Improving access to information;</i></li> <li>• <i>Simplifying the procurement process;</i></li> <li>• <i>Setting proportionate requirements;</i></li> <li>• <i>Encouraging collaboration;</i></li> <li>• <i>building capacity; and</i></li> <li>• <i>Setting targets for the proportion of contracts awarded</i></li> </ul>	<i>Perry (2011)</i>
□ <i>Setting targets for the proportion of contracts awarded</i>	<i>Booth (2013)</i>
□ <i>Use of target procurement;</i>	<i>Watermeyer (2004)</i>
□ <i>Uniformity in tender and contract documentation</i>	<i>Watermeyer and Governdor (2000)</i>
<ul style="list-style-type: none"> <li>• <i>Reservations,</i></li> <li>• <i>Preferencing supply- side</i></li> </ul>	<i>Watermeyer, (2003)</i>

<ul style="list-style-type: none"> <li>• <i>Work packaging;</i></li> <li>• <i>Subcontracting;</i></li> <li>• <i>Simplifying tender conditions;</i></li> <li>• <i>Waving the requirement for submission of performance bond or guarantee for work up to a given threshold;</i></li> <li>• <i>Simplifying condition for collateral;</i></li> <li>• <i>Exclusive preference for local firms; and</i></li> <li>• <i>Margin of preference</i></li> </ul>	Komu et al (2012)
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(Table 2.3 Continued)

<b>PROCUREMENT POLICY OR STRATEGY</b>	<b>AUTHORS</b>
□ <i>Uniformity of tender documentation</i>	Schapper, et al. (2006)
<ul style="list-style-type: none"> <li>• <i>Assigning higher preference weightings to local businesses in competitive bidding processes;</i></li> <li>• <i>Sole sourcing arrangements with local suppliers;</i></li> <li>• <i>Price matching;</i></li> <li>• <i>Dividing large contracts into smaller ones (unbundling) to create opportunities for smaller local suppliers;</i></li> <li>• <i>Requiring non-local suppliers to sub-contract locally or to enter joint ventures with local suppliers;</i></li> <li>• <i>Providing technical and management training and mentoring; and</i></li> <li>• <i>Linking local businesses to other service providers and agencies that promote technological innovation and provide access to finance</i></li> </ul>	Esteves and Barclay (2011)
<ul style="list-style-type: none"> <li>• <i>Big public projects should be packaged into small lots;</i></li> <li>• <i>Unregistered contractors should not be allowed to tender;</i></li> <li>• <i>Donors should be persuaded to relax conditions to enable local contractors to participate in their projects;</i></li> <li>• <i>Procurement procedures need to be streamlined to make them more transparent and standard</i></li> </ul>	Materu (2001)
<ul style="list-style-type: none"> <li>• <i>Subcontracting, and</i></li> <li>• <i>Joint Venture arrangements</i></li> </ul>	Eyiah (2003)

Source: Author's literature review

## 2.9 POLICIES FOR CAPACITY BUILDING IN GHANA

In this section, some policies in the country that aims at building the capacity of indigenous construction firms, particularly the SMEBCs in Ghana will be highlighted. In the section 60 of the Public Procurement Act 2003 (Act 663), a procurement entity may grant margin of preference in favour of domestic suppliers and contractors over their foreign counterparts in the award of contracts. This is to make domestic contractors much competitive and improve their access to public

contracts. Indeed, improving domestic contractors access to contracts is seen as one of the means to building their capacity (Booth, 2013; Komu, et al., 2012; Watermeyer, 2004).

Recently, the Volta River Authority (VRA) has formulated a policy framework whose primary objective is to promote and sustain industrialization through the utilization and optimization of the indigenous resources of the country (VRA, 2012). The following are the specific objectives of the policy framework:

- 1) To outline Local Content issues arising out of VRA's operations;*
- 2) To provide broad guidelines or ideals meant to guide or assist various stakeholders in taking prudent decisions in the implementation of Local Content concept within VRA;*
- 3) To provide financial empowerment to VRA's local contractors and suppliers;*
- 4) To promote efficient implementation of the Local Content policy in such a manner that will protect the interest of the Authority;*
- 5) To generally promote the indigenization of knowledge, expertise and technology in VRA;*
- 6) To stimulate the participation of Ghanaians in the value and supply chain of VRA's operations;*
- 7) To establish a Local Content Implementation/Monitoring Unit (LCIMU) that will set targets proportional to current capabilities and realistic potential for increase, against baseline of local content for each project or procurement of goods and services;*
- 8) In order to promote local participation in Foreign Direct Investments (FDIs), a Joint Venture arrangement shall be put in place, where practicable, to enable VRA obtain at least 5% equity share in the case of goods and at least 10% equity in the case of services. Such companies "shall operate from Ghana" ("shall be incorporated under Companies Code 1963 Act 179");*

- 9) *To achieve at least 90% local employment for Ghanaian citizens within 3 years after the operationalization of any major VRA Project;*
- 10) *To empower VRA's vendors to develop capabilities to produce goods and services domestically to compete with international businesses;*
- 11) *To facilitate the creation of complementary industries that will help sustain VRA's operations and leadership in the power sector;*
- 12) *To achieve and maintain a degree of influence or control by VRA over its development initiatives; and*
- 13) *To provide a rigorous and transparent monitoring and reporting system to ensure delivery of the Policy objectives.*

Following Ghana's discovery of oil in commercial quantities and its subsequent production, a lot of discussions were made with regard to the involvement of Ghanaians in the oil business. However, some the questions which have invariably come up in all these discussions are:

- *"Are the Ghanaian firms capable enough to participate fully in the oil business?"*
- *"Are the interests of Ghanaians considered in the petroleum industry?"*

In response to these questions and others, Petroleum (Local Content and Local Participation) Regulations, 2013 (L.I. 2204) have been formulated to ensure among other things the following:

- a) *promote the maximisation of value-addition and job creation through the use of local expertise, goods and services, businesses and financing in the petroleum industry value chain and their retention in the country;*
- b) *develop local capacities in the petroleum industry value chain through education, skills transfer and expertise development, transfer of technology and know-how and active research and development programmes;*

- c) achieve the minimum local employment level and in-country spend for the provision of the goods and services in the petroleum industry value chain as specified in the First Schedule; and;*
- d) increase the capability and international competitiveness of domestic businesses*

It is noted that this policy is for the petroleum sector alone and it does not transcend to other sectors of the economy. Hence, the researcher agrees with VRA (2012) when it stated in its Local Content Policy Framework of the need for National Local Content Policy Framework which will see to it that local resources and expertise is harnessed for the development of the country.

## **2.10 CHAPTER SUMMARY**

In this chapter, public procurement and its significance were discussed. The significance of the construction industry, the SMEBCs, and the various factors that affect their capacity were also discussed. There was also a discussion on the various public procurement policies and strategies that are being used by various jurisdictions in building the capacity of their construction industries, particularly the SMEBCs. Other initiatives in Ghana that aim at building the capacity of local contractors were also elucidated. The literature review revealed a raft of factors affecting the capacity of SMEBCs and various PPP & Ss that are adopted to building the capacity of SMEBCs from different researchers. It is therefore imperative to evaluate the significance of these factors affecting the capacity of SMEBCs in Ghana and also to ascertain the importance of the various identified public procurement policies, and strategies in building the capacity of SMEBCs in Ghana. The next chapter of this research work focuses on the research methodology. The methods that were used to capture the empirical data, including details of the research strategy adopted, data collection techniques, sample selection, and the employed data analysis techniques will be discussed.

## **CHAPTER THREE**

### **RESEARH METHODOLOGY**

#### **3.1 INTRODUCTION**

The previous chapter discussed extant literature on the subject of the study, where light was shed on the relevant areas of public procurement and SME Building Contractors (SMEBCs). The significance of public procurement and the construction industry in general was brought to the fore. Indeed, factors affecting the capacity of SMEBCs, and public procurement policies and strategies (PPP&S) that build the capacity of indigenous contractors, particularly the SMEBCs were also elucidated. This chapter therefore focuses on how the research was conducted in order to achieve the aim and the set objectives of the study. Research methodology is defined as the philosophy, system of methods and principles used in a particular discipline (Humphrey, 2005). Indeed, it is the analysis of how research should or does proceed (Gamage, 2011). With reference to the concept of the ‘research onion’, methodology includes philosophy, approaches, strategies, methods choices, time horizons, data collection and analysis techniques and procedures (Saunders, et al., 2007). In this regard, this chapter elucidates the following: research philosophy, design of research instrument, research strategy, data collection, and data analysis.

#### **3.2 RESEARCH PHILOSOPHY**

Research philosophy is a broad term that relates to the development of knowledge and the nature of knowledge (Denscombe, 2007). This significantly influences the research framework that is adopted (Bryman, 2004; Saunders, et al., 2007). According to Easterby-Smith, *et al.* (2002), there are at least three reasons for understanding the philosophical issues of a research, thus: it helps the researcher to clarify research designs, recognises which design will work and which will not, and

identifies and creates designs that may be outside the researchers past experience. Indeed, Easterby-Smith, *et al.* (2002) further asserts that research philosophies guide the researcher to consider research constraints of different subjects or knowledge structures. These reasons underscore the relevance of knowledge of philosophical views in order to address different issues in research which are based on different views of ontology, epistemology, and axiology (Easterby-Smith, *et al.*, 2002). Indeed, these philosophical paradigms contain important differences which influence the way research is thought of (Saunders, *et al.*, 2007). Indeed, researchers make knowledge claims to their studies, thus: researchers initiate the research with certain assumptions about how they will learn and what they will learn during their inquiry (Creswell, 2003). Two main philosophical positions of research are discussed in this chapter, vis-à-vis: ontological and epistemological considerations.

### 3.2.1 Ontological Consideration

Ontology refers to the nature of reality, involving the logical investigation of the different ways in which types of things are thought to exist, and the nature of various kinds of existence (Saunders, *et al.*, 2007). Saunders, *et al.* (2007) asserts that an ontological position of a research can either be predicated upon objectivism or subjectivism. The ontological position underpinning this research is the objectivism position. This is because the factors that affect the capacity of SMEBCs in the GCI exist as external facts that are beyond the reach and influence of the researcher. Again, PPP & Ss that build the capacity of SMEBCs are objective realities and not the constructions of the researcher. This implies that in answering the research questions: a) what are the factors that affect the capacity of SMEBCs in the GCI? And b) what are the public procurement policies and strategies that build the capacity of SMEBCs in the GCI? The objectivism ontological position was followed.

### **3.2.2 Epistemological Consideration**

Epistemology is concerned with what constitutes acceptable knowledge in a field of study (Saunders, et al., 2007). Indeed, the epistemological questions drive the relationship between the researcher and the subject under investigation (Ahadzie, 2007). Extant literature reveals that the two main epistemological perspectives are positivism and interpretivism (Denscombe, 2007; Saeidi, 2002; Saunders, et al., 2007).

A researcher with a positivist view considers the social world as concrete, objective reality such that laws can be found that explain this reality. In view of this research position, this real world can only be studied by employing methods that prevent human contamination of its apprehension or comprehension (Kheni, 2008). It is of the view that the world conforms to fixed laws of causes and effects, and complex issues can be dealt with by employing simplified or fundamental approach. This position stresses objectivity, measurement, and repeatability. In this case, it is possible for the researcher to be objective from a detached position of the research situation. It must be noted that neutral observation of reality must take place without bias from the researcher (Fitzgerald & Howcroft, 1998; Bryman, 2004).

A researcher with interpretivist view on the other hand, is critical to the application of scientific model to social study. It therefore, advocates the absence of a universal truth and significantly stresses the realism of context, where the understanding and interpretation are from the researcher's perspective and point of reference. Indeed, an uncommitted neutral position is impossible when following the interpretivist position in research in that the researcher is immersed in the research situation and the values and beliefs of the researcher become the driving force in the interpretation of findings (Fitzgerald & Howcroft, 1998; Bryman, 2004).

With regards to the epistemological stance of this research, the researcher is of the positivist position. This is based on the fact that the conduct of the research could be carried out without bias and that objective conclusions could be made from data collected from a detached position. In this regard, the research is on the proposition of the identification of factors affecting the capacity of SMEBCs, and PPP & Ss that build the capacity of SMEBCs in Ghana. This can be carried out without bias and can be replicated. Again, this research is of the view that the complex relationship between the factors affecting the capacity of SMEBCs and the various PPP & Ss that build the capacity of SMEBCs in Ghana could be explored through a systematic but simplified piecemeal approach.

### **3.3 RESEARCH STRATEGY**

In addition to the research philosophical positions of this research which have been explained in Section 3.2, there is the need for the clarification of the orientation of the researcher to the conduct of research (Bryman, 2004). This was concerned with the way in which the research objectives are interrogated, being it quantitative or qualitative (Creswell & Clark, 2007; Saunders, et al., 2007). Research strategies link the researcher to specific approaches and methods for collecting and analysing data (Denzin & Lincoln, 2000). Indeed, the decision to adopt any particular strategy is based on the purpose of the study, the type and availability of information for the research (Naoum, 2002). According to Neuman (2003), even though quantitative and qualitative research differs in many ways, they can complement each other. This research employed the mixed method strategy as it helps to neutralise biases associated with any single method or cancel the biases of several methods for the research (Gamage, 2011).

In achieving the first and second objectives of the study, a detailed literature review was firstly conducted to identify factors that can potentially affect the capacity of SMEBCs as well as public

procurement policies and strategies that can help build the capacity of SMEBCs. This was then followed by qualitative and quantitative approaches to corroborate or otherwise the various factors identified from literature. The last objective was achieved by encapsulating key findings from the literature review, questionnaire survey, and semi-structured interviews with problem solving methodology.

### **3.4 OPEN SYSTEM THEORY**

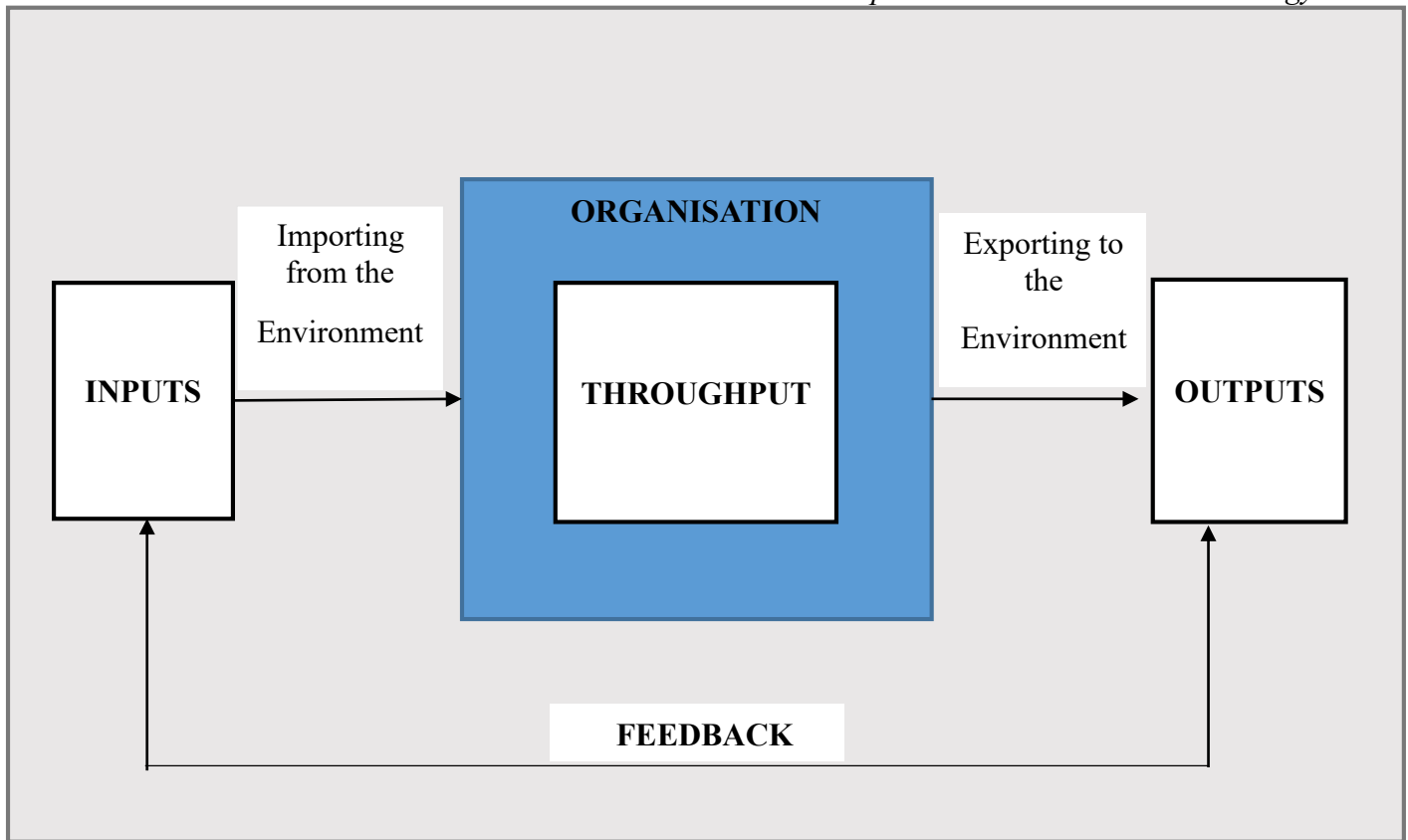
This section discusses the open system theory which underpins this research work. Open system is a variant of the general system theory (GST), where an organisation can generally be perceived as either open or closed system (Ashmos & Huber, 1987; Amagoh, 2008; Thien & Razak, 2012; Chen & Stroup, 1993). Indeed, the angle from which study views an organisation influences the analysis and assumptions that will be made.

Organization theorists who embrace closed systems approach to the study of organizations assume that the main features of an organization are its internal elements with little or no interaction with its environment (Amagoh, 2008). This argument has however been criticised by many authors on the grounds that it has the tendency to a disregard of differing organisation environments and the nature of organisational dependency on environment (Ashmos & Huber, 1987). Amagoh (2008) argues that the lack of coordination between the organization and its external environment in closed systems strains the organization's capacity to import sufficient energy from its environment for sustenance. With the assumption of an organisation as a closed system can be a hindrance to the influence of public procurement on the organisation. Owing to this constraint, this research work was not based on the closed systems approach.

Open system's approach to organisation studies on the other hand views the organizations' interaction with the external environment as vital for organizational survival and success (Amagoh,

2008). Indeed, in open systems, any change in any elements of the system causes changes in other elements (*c.f.* Amagoh, 2008). Open systems approach reflects the idea that all elements of the model are open to influences from the external environment which otherwise would not have been considered in the closed systems approach (Snider & Rendon, 2008; Ashmos & Huber, 1987). The external environment of the organisation can be understood as government regulation, sociocultural, economic, and political forces which influence its growth and survival (Thien & Razak, 2012; Snider & Rendon, 2008; Kast & Rosenzweig, 1972).

An open system is basically made-up of inputs, conversion/throughput, outputs, and feedback (Snider & Rendon, 2008; Thien & Razak, 2012; Kast & Rosenzweig, 1972; Emery, 2004). Indeed, it can be considered as a transformation model in that in a dynamic relationship with its environment, it receives various inputs, transforms these inputs in some way, and exports outputs to the environment (Kast & Rosenzweig, 1972). Figure 3.1 illustrates an open system perspective where an organisation imports inputs from the environment, transforms it within the throughput/conversion system and then exports outputs to the environment. However, feedback is relevant to ensure that the cyclical event can be repeated so that the survival of an organization is warranted (Thien & Razak, 2012). This approach helps in the identification, description, and analysis of the key components of the system as well as the understanding of the complex connections and the interrelationships among various components (Snider & Rendon, 2008).



Source: (Ivanko, 2013)

**Figure 3. 1 An Organisation as an Open System**

The cyclical event as illustrated in Figure 3.1 begins with the process of input-throughput-output (Thien & Razak, 2012; Snider & Rendon, 2008). Inputs in Figure 3.1 refer to the resources that import energy from the environment into the system such as human and financial resources (Thien & Razak, 2012). According to Thien and Razak (2012), throughput refers to the transformation process from input to output while the output is then ready to interact and adapt with the external environment dynamically in order to produce value-added output. Section 3.5 illustrates the application of the open systems theory to the study.

### 3.5 OPEN SYSTEMS THEORY IN THE CONTEXT OF THE RESEARCH

This section elaborates the application of the open systems theory to capacity building of SMEBCs through PPP & Ss. In the context of this research work, an SME building construction firm/organisation is considered to be an open system that is influenced by its external environment that is created by PPP & Ss towards building its capacity. This is predicated upon the assumption that SMEBCs will be able to capitalise on the opportunities that is offered them by public procurement entities through their PPP & Ss. This is in accordance with the definition of capacity building of SMEBCs adapted for this research in Section 2.5.1.2 (that is, *the creation of an enabling environment in Ghana through policies and strategies for SMEBCs to build their various capacities*) and open systems' proposition that *all elements of the model are open to influences from the external environment*.

In the context of this study, the definition of the system, that is, an SME building construction firm is based on MWRW&H's classification (that is, contractors in the D2K2, D3K3, and D4K4 categories) as espoused in Section 2.4.2. According to Enemark (2003), capacity building requires amongst other things a study of the overall system and the environment within which organisations operate and interact. In this regard, the study focuses on the factors affecting the capacity of the system and its external environment. Hence, the factors that affect the systems' (SMEBCs) capacity and PPP & Ss that can potentially help in addressing some of the challenges of SMEBCs will be studied. The open system thinking forms the basis of the framework for capacity building of SMEBCs through public procurement that has been presented in Section 4.4.

### **3.6 DESIGN OF RESEARCH INSTRUMENT**

In order to achieve the aim and objectives of the study, literature review, semi-structured interview, and closed-ended questionnaires were used to elicit information from major stakeholders in the Ghanaian construction industry vis-à-vis: public clients, consultancy firms, and SMEBCs (contractors in the D2K2, D3K3, and D4K4 categories) in the Greater Accra region. It was therefore expected to gain multiple perspectives on the research issues.

Firstly, a review of extant literature on public procurement and the construction industry, particularly, SMEBCs in Ghana was conducted. The literature review constitutes a very significant component of the research in that it sets the pace for the development of the questionnaires and the issues that were raised during the interview (Saunders, et al., 2007; Denscombe, 2007). For this reason, reviewing extant literature on the subject was imperative.

Secondly, semi-structured interview was employed. The reason for choosing the semi-structured interview technique was essentially due to the researcher's aim to encourage the interviewees to freely discuss their own opinions or perceptions on the potential factors affecting the capacity of SMEBCs in Ghana, and PPP & Ss that can be used to help build the capacity of SMEBCs. This method gave the opportunity for questions to be adjusted depending on the attributes of a specific firm/client/institution/ professional and the given type of problems in their knowledge area. Indeed, the semi-structured interviews provided an opportunity to regulate the order of the questions as semi-structured interview is neither a free conversation nor a highly structured questionnaire (Saunders, et al., 2007). More so, the respondents had the opportunity to expand their ideas and spoke in detail about diverse subjects rather than relying only on concepts and questions defined in advance of the interview. An assertion can therefore be made that semi-structured interviews are

more flexible than standardised methods such as the structured interview or survey (see Appendix 2 for the interview schedules, including the one for the framework validation).

Thirdly, questionnaires were used to gauge the various respondents' general opinion about the various issues that emerged from the literature review and the semi-structured interviews that were conducted (Fowler & Floyd, 1995). This made it possible for descriptive or exploratory research (Saunders, et al., 2007). The questionnaires also allowed the researcher to get the respondents to respond to exactly the same set of questions (Bernard, 2000). However, questions that ask the respondent for data they could not or do not have, including questions that assume the respondent knows something about the subject and more so personal questions were avoided (Fowler & Floyd, 1995; McIntyre, 1999; Salant & Dillman, 1994). More so, objectionable statements that reflect the researcher's bias and questions that require difficult calculations were similarly avoided with regards to the wording of the questionnaire (Saunders, et al., 2007). Again, questions with predisposition type, either for or against a particular perspective were avoided, because such questions may be leading or may include assumptions that may not be true.

### **3.7 DATA COLLECTION**

#### **3.7.1 Sample Size Determination**

The determination of a representative sample size of a given population is an important aspect of every scientific research (Field, 2005). In that a chosen sample makes it possible for statistical inferences to be made about a given population (*ibid*). However suitable this sample size will be is contingent on a number of variables, including the purpose of the study, population size, and the allowable sampling error (Israel, 2013). Therefore, it was imperative to determine a suitable sample size for this study. Indeed, there are several approaches that can be used for the determination of the sample size for a given study. These include the use of census, for a smaller population; statistical formulae; published sample size determination tables; and sample size of a similar study

(Israel, 2013). For the questionnaire survey aspect of this research work, the sample size was determined using a statistical formula. The appropriate sample size for the survey (n) was estimated using Equation 3.1 (Maisel & Persell, 1996):

$$n = (Z \times \text{Standard Deviation/Confidence Interval})^2 \dots \text{Equation 3.1}$$

With the formula above, the appropriate sample size can be estimated by establishing the confidence interval, the Z-value, and the estimated standard deviation. However, establishing the standard deviation was a difficult task in that the data was yet to be collected. In such a situation, where the standard deviation is unknown, the sample size can be estimated using expected proportions (P) (Maisel & Persell, 1996; Naing, et al., 2006). The expected proportion (P) is defined as the number of cases in any given category divided by the total number of cases (*c.f.* Ahadzie, 2007). Without any experience to draw on, the worst case scenario with the P-value of 0.5, half way between, was considered (Ahadzie, 2007). With the P-value at 0.5, the largest standard error can be obtained, which will then force a researcher to select the largest possible sample size (Ahadzie, 2007; Israel, 2013). Even though this will ensure sufficient precision, a sample size that is more than necessary could be produced (*c.f.* Ahadzie, 2007). Thus, the population standard deviation was estimated as follows:

$$\text{ST.DEV.} = \text{Square Root } [P(1-P)] \dots \text{Equation 3.2}$$

$$\text{Therefore, ST. DEV.} = \text{Square Root } [0.5(1-0.5)] = 0.50$$

Hence, at a confidence limit of 95% and substituting Equation 3.1 with P = 0.50; Z = 1.96 (statistic of confidence level, see Naing, et al., 2006); and a confidence interval of plus or minus 0.1 (see Ahadzie, 2007), the appropriate sample size was estimated as follows:

$$n = (1.96 \times 0.50/0.1)^2 = 96.$$

This indicates that with an approximately 96 sample size obtained of the completed questionnaire, the data would be enough for a normal distribution of the sample to be achieved (*c.f.* Ahadzie, 2007). However, according to Israel (2013), 30% is added to the estimated sample size to cater for nonresponses. Hence, the 96 sample size was increased to 125 ( $1.3 \times 96 = 124.5 \approx 125$ ) in that it is rarely possible to obtain a survey response of 100% (*c.f.* Ahadzie, 2007).

### **3.7.2 Sampling Techniques and Sample Frame**

The sampling approach adopted for the study followed a sequential process, involving first a purposive and snowball sampling techniques for selecting major stakeholders for the semistructured interview and administering survey questionnaires to respondents who work with, public client organisations, consultancy firms and SMEBCs (D2K2, D3K3, D4K4) in Ghana.

### **3.7.3 Purposive and snowball sampling**

Purposive sampling refers to strategies in which the researcher exercises his or her judgment about who will provide the best perspective on the phenomenon of interest, and then intentionally invites those specific perspectives into the study (Saunders, et al., 2007). The purposive sampling techniques were used to select the major stakeholders with regards to procurement of construction works in Ghana. In selecting the professionals, the study required respondents who have knowledge and experience related to construction procurement. A plethora of indicators of such knowledge, has been highlighted by several authors (Sourani & Sohail, 2010). Among these indicators are: publications in the field; signs of professionals' eminence such as leadership, membership, or holding office in a professional society or organization; peer judgment and recommendations; honours by professional societies, self-rating of the expertise in the relevant area; presentations made at national conventions; and relevant years of experience. However, the research based the selection on indicators such as signs of professionals' eminence such as leadership, membership, or

holding office in a professional society or organization, relevant years of experience in the field of procurement of construction works. These professionals were made up of quantity surveyors, project managers, contractors and procurement managers. This was mainly due to the nature of the issues to be investigated during the study.

With regards to the questionnaires administration to the major stakeholders of public procurement of construction works vis-à-vis: public clients, SMEBCs (contractors in the D2K2, D3K3, and D4K4 categories), and professionals (Quantity Surveyors, Procurement Managers and Project Managers in the Greater Accra region), snowball technique was also employed. Snowball sampling technique was utilised in obtaining the sample size because of the difficulties encountered in assessing the population size of the class of contractors and professionals who are into procurement of construction works. Snowball sampling is a technique for finding research subjects where one subject in this sampling technique gives the researcher the name of another subject, who in turn provides the name of a third, and so on in order to overcome the problems associated with concealed or hard-to-reach populations (Atkinson & Flint, 2001; Saunders, et al., 2007). The Greater Accra region was chosen because most Ghanaian contractors and consultants/ procurement professionals tend to operate officially in the region (Ahadzie, 2007; Donkor, 2011; Fugar & Agyakwah-Baah, 2010). A total number of 125 questionnaires were sent, out of which 80 were retrieved (representing 64% response rate).

### **3.8 DATA ANALYSIS**

This section presents the data analysis process and techniques used in the research work. The section describes the analysis process and methods used to analyse both qualitative and quantitative data that were respectively collected through semi-structured interview and questionnaire survey. The analysis was done in two stages. The qualitative data was firstly analysed (see Section 4.2) and it was then followed by the quantitative data analysis (see Section 4.3). These have been explained in

the following sections with the qualitative data analysis as the first section, followed by the quantitative data analysis.

### **3.8.1 Qualitative Data Analysis**

Data collected through semi-structured interviews were analysed using a qualitative data analysis technique. This involved inducting insights from the interview data, and processing the data further in order to gain more in-depth understanding of the phenomenon under study. The organisation of qualitative data for analysis is an aspect that requires much effort (Hirsjärvi, et al., 1997; Saunders, et al., 2007). There was a transcription of the audio recorded interviews where each transcript was read repeatedly in order to clean up and organise the contents of the transcription to get a general sense of the information, and to reflect on its overall meaning. The transcripts were then categorized and coded using Hyper-Research (qualitative data analysis software). These were based on the discussions and what the main findings from the interviews were. This was done for both the first and second (framework validation interview) semi-structured interviews.

### **3.8.2 Quantitative Data Analysis**

With regard to the quantitative data analysis, data collected through questionnaire surveys were analysed using quantitative techniques that will be described in this section. Data analysis techniques are based on the type of data collected and their scales of measurement being it nominal, ordinal, interval, or ratio (Gamage, 2011). Hence, the identification of data scales of measurement is essential prior to a statistical analysis of collected data (Pagano, 2007; Gamage, 2011).

The research adopted the Likert scale in the evaluation of the significance of the factors that affect the capacity of SMEBCs (least to highest that is on five scale levels). The scores given by the various respondents were possible for the mean scores of the various variables to be computed. For example, the mean score “1” indicates “least”, mean score “5” indicates “highest” whiles mean

score “3” indicates that an average view on a factor affecting the capacity of SMEBCs in Ghana and it is deemed to be “neutral”. Again, one sample t-test was employed to determine whether the mean rating of a variable is significantly different from the population mean,  $\mu = 3.0$  (Ayarkwa, et al., 2010).

In addition, owing to the large number of variables (that is, the factors affecting the capacity of SMEBCs in Ghana, and the PPP & Ss for CB of SMEBCs) involved in the study, it was imperative to use factor analysis (that is, principal component analysis) to establish which of the variables could be measuring aspects of the same underlying dimensions. Factor analysis made it possible for clusters of related variables to be formed, thereby reducing the large number of variables into a more easily understood framework (Ahadzie, 2007; Field, 2005).

### **3.9 CHAPTER SUMMARY**

In this chapter, the research methodology was dealt with. The research philosophical positions that guided the research instrumentation, data collection, and analysis were explained. In addition, the chapter elucidated the key elements that are required in deciding on a suitable research methodology to address any research problem. Light was also shed on open systems theory; the theoretical proposition of the study. The analytical techniques adopted for the study was also explained. The chapter that follows presents the analysis and discussions of the data collected. Again, the Framework for Capacity Building of SMEBCs in Ghana through Public Procurement will be developed and presented.

## **CHAPTER FOUR**

### **ANALYSIS AND DISCUSSION OF RESULTS**

#### **4.1 INTRODUCTION**

The previous chapters have dealt with the background, literature review, and the research methodology of the study. This chapter adds on to the report by presenting the analysis and discussion of the results of the fieldwork in the study setting. The first section presents the results of exploratory interviews conducted with major stakeholders in the realms of procurement of construction works in Ghana. The section presents empirical data on the capacity building of SMEBCs, and PPP & Ss that can help build the capacity of the SMEBCs obtained from semistructured interviews. The section does present results from the perspective of clients, contractor association, construction firms and consultants and academics in the Ghanaian construction industry. The second section of the chapter presents the results of questionnaire survey administered to major stakeholders in the construction industry vis-à-vis: SMEBCs, construction procurement professionals and client organisations. The results are presented as descriptive summaries of the factors that affect the capacity of SMEBCs, and the various PPP & Ss that can help build the capacity of SMEBCs in Ghana.

#### **4.2 STAKEHOLDERS' VIEWS ON CB OF SME BUILDING CONTRACTORS**

This section presents the results of the fieldwork in the study setting. Indeed, the section covers the qualitative enquiry of stakeholders' views on Capacity Building of SME Building Contractors and Public Procurement Policies and Strategies that can be used to help build their capacity in Ghana.

The exploratory interviews were conducted with a total number of seven (7) major stakeholders who were purposively selected based on their experiences in the area of public procurement of construction works (see Appendix 4). The empirical data obtained from semi-structured interviews presents the results from the viewpoints of relevant stakeholders within the Ghanaian construction industry in relation to the following:

- Stakeholders' Experiences in Public Procurement of Construction Works ;
- Stakeholders' Understanding of Capacity Building;
- Areas that SME Building Contractors Lack Capacity;
- Factors that affect the Capacity of SME Building Contractors in Ghana; and
- Public Procurement Policies and Strategies for Capacity Building of SME Building Contractors.

#### **4.2.1 Stakeholders' Experiences in Public Procurement of Construction Works**

Majority of the interviewees have been in the construction industry for a good number of years. Six (6) of the respondents have over thirty years of experience in the field of construction procurement, whereas one of them has over ten years of experience. All the respondents are members of their respective professional bodies and associations. This suggests how knowledgeable the respondents are with regards to the construction industry and public procurement of construction works in Ghana. Another criterion that is indicative of the respondents' knowledge in the study area is the positions that they have occupied before or still occupying in their respective professional bodies and associations (*c.f.* Sourani & Sohail, 2010). The respondents meet this criterion in that most of the respondents have held very reputable positions (in various capacities) in their respective organisations and for that matter, they can be construed to be knowledgeable in their professional endeavours. These indicators back an assertion

that the opinions shared by these respondents represent an impression of what pertains in the field in relation to study area.

#### 4.2.2 Stakeholders' Understanding of Capacity Building

The term capacity building is used in several ways according to the intention of the user (Enemark, 2003; UNESCO, 2006; Morgan, 2006). For this reason, stakeholders were asked about their understanding of the term in order to put the study into perspective. Indeed, most of the respondents expressed varying opinions about what constitutes capacity building. Some of the respondents explained the term as follows:

*“That is anything that a person does that will increase or improve upon his or her work or ability. For instance, when you are working you make plans to increase your knowledge about the work you do, you buy more plants, equipment, etc.” (Informant’s view).*

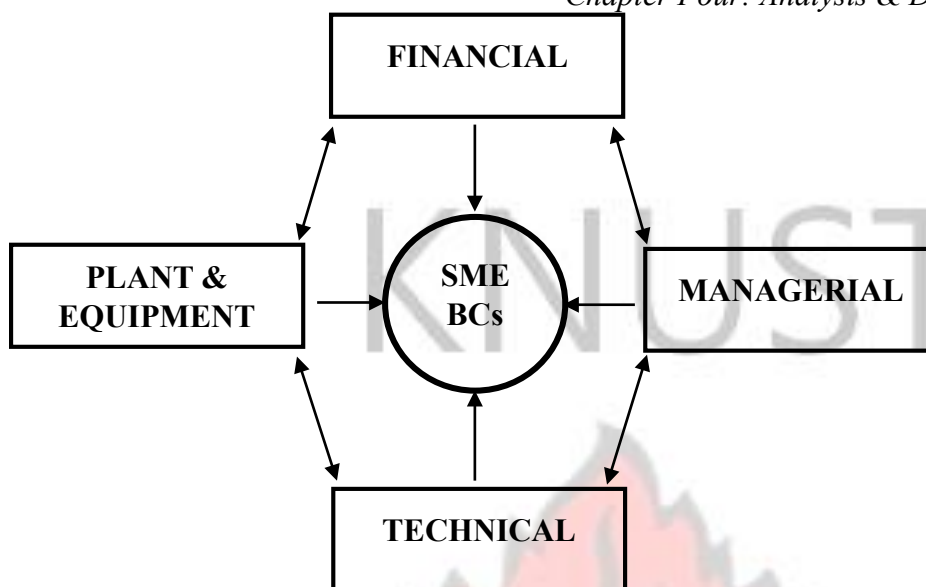
This is consistent with an assertion made by UNESCO (2006) as explained in Section 2.5.1.2. This definition suggests that capacity building is anything an individual or an organisation does to improve upon his or her ability to execute work effectively. Indeed, other respondents were of similar opinion, except that other dimensions to the definition were added. For instance, another respondent explained that capacity building as follows: *“Capacity building is when you do anything to increase or enhance the ability of somebody or a person (both natural and artificial) to deliver. When we talk about capacity building, it can also imply that we are trying to increase the ability of individual or an organisation by either trying to improve upon their plant holdings or training their workforce...It can also mean by providing an enabling environment for a person in order to enhance their ability, however, this forms part of the processes that are used to improve a person’s ability” (Informant’s view).*

This assertion has got a link with the definition given by UNDP (1991) and Kululanga (2012) as explained in Section 2.5.1.2. The definition adapted for this research is the creation of an enabling environment in Ghana through public procurement policies and strategies for SMEBCs to build their capacities. This is for the SMEBCs to function effectively and efficiently to meet the demands of their clients.

#### 4.2.3 Key Areas where SME Building Contractors in Ghana Lack Capacity

Literature has revealed that the capacity of contractors in Ghana is generally low and this has been the reason why most major public contracts are awarded to the few foreign construction firms that are operating in the country (Ahiaga-Dagbui, et al., 2011; Amoah, et al., 2011; Badu & OwusuManu, 2010; Fugar & Agyakwah-Baah, 2010; Laryea, 2010). This assertion is a general reflection of the situation among the various developing countries (Gyadu-Asiedu, 2009). Indeed, the capacity of building contractors in Ghana is lacking in several areas. In a response to the question of the areas in which SMEBCs in Ghana lack capacity, a respondent put it this way *“Almost everything; they don’t have plants...even the technical expertise they don’t have...even their financial levels too....so I think they lack almost everything ...”* (Informant’s view).

Indeed, according to the various interviewees, most of the contractors in the country, particularly those in the SME categories lack capacity in the areas of Financial, Technical, Managerial, and Plants and Equipment levels. One of the interviewees asserted that the various areas that the contractors lack capacity are interrelated in that one may lead to another. This is consistent with an assertion revealed in literature (*c.f.* Egbu, 2000; Thwala & Phaladi, 2009). The Figure 4.1 below illustrates the various areas that SME Building Contractors (SMEBCs) in Ghana lack capacity as explained by the various respondents.



Source: Author's Fieldwork

**Figure 4. 1 Key Areas that SMEBCs in Ghana Lack Capacity**

As it has been explained above, the various areas that SMEBCs lack capacity are interrelated. From Figure 4.1, the double arrows illustrate this interrelationships. However, the single arrows show that all the four areas are lacking by SMEBCs. For instance, if a contractor is financially constrained, it will be difficult for him to purchase the requisite plant and equipment in order to execute his jobs effectively. The four areas (financial, managerial, plant & equipment and technical) have been ascertained as the key areas that SMEBCs lack capacity in Ghana, and for these construction firms to continue to be relevant in the socio-economic development of the nation, these areas need to be tackled. Indeed, for these capacities to be built, much effort is required from the contractors themselves and the state (that is, providing an enabling environment by putting certain policies and strategies in place).

#### **4.2.4 Factors Affecting the Capacity of SMEBCs in Ghana**

According to literature, there are a lot of factors that constrain contractors in the construction industry, particularly those in the SME categories (Eyiah, 2003; Laryea, 2010; Badu &

*Chapter Four: Analysis & Discussion of Results*

OwusuManu, 2010). The respondents were asked what they thought were the main factors that affect the capacity of SMEBCs in Ghana. The respondents' answers described various challenges confronting the various contractors, particularly those in the SME categories in Ghana. More so, some of the factors were concurrence with literature. However, there are other factors that were mentioned by the respondents which are not consistent with literature, hence, giving an indication that they are peculiar to the Ghanaian construction industry. The respondents recounted as presented in Table 4.1.

**Table 4. 1 Reported Factors Affecting the Capacity of SMEBCs in Ghana**

No.	Factors Affecting the Capacity of SMEBCs in Ghana
1	<i>Delay in payment of contractors for work done</i>
2	<i>Poor management</i>
3	<i>Structure of the companies</i>
4	<i>Lack of fair competition</i>
5	<i>Limited access to capital</i>
6	<i>Lack of understanding of the procurement processes</i>
7	<i>No mobilization</i>
8	<i>High cost of capital</i>
9	<i>Lack of qualified personnel</i>
10	<i>Non-business-like style of contractors</i>

*(Table 4. 1 Continued)*

No.	Factors Affecting the Capacity of SMEBCs in Ghana
11	<i>Lack of continuous training</i>

12	<i>Low return on operation</i>
13	<i>Weak enforcement of rules and regulations</i>
14	<i>Lack of support for training and development</i>
15	<i>Poor networking within industry</i>

Source: Author's fieldwork

The factors that have been presented in Table 4.1 were obtained from the interviews that were conducted. These factors were compared to those that were obtained from the literature to avoid repetition, and to add onto the list the unique factors. These were subsequently presented in the Section B of the survey questionnaire (see Appendix 2) for evaluation by a larger respondent group. This was for the purposes of establishing the significant factors affecting the capacity of SMEBCs in Ghana which has been presented in Section 4.3.2 and Section 4.3.3.

#### **4.2.5 Public Procurement Policies & Strategies for CB of SMEBCs in Ghana**

Public procurement is seen as a major policy tool that governments use to achieve several socioeconomic objectives (Astbrink & Tibben, 2013; McCrudden, 2004; Watermeyer, 2012). McCrudden (2004) for instance, elucidates a number of socio-economic objectives that governments have achieved through public procurement. Apropos the various stakeholders that were interviewed on the use of public procurement for capacity building of SMEBCs in Ghana, they all agreed that public procurement can be helpful. They however opined that for public procurement to be able to help build the capacity of SMEBCs in Ghana, its rules and regulations must be fully adhered to. A respondent puts it this way “*They can be used for capacity building of SMEBCs if the procurement procedures are firmly adhered. However, if the fabric of the whole process is pretentious, that is, when they pretend to be following the laid down procedures, whereas*

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*in reality they do not allow the system to work as it should, it becomes difficult for proper competition for example to take place. Indeed, if the processes are followed, they will be able to identify the gaps in the industry and address them” (Informant’s view).*

More so, in responding to the question of how public procurement can be used to build the capacity of SMEBCs in Ghana, the respondents gave a number of strategies that can be employed for that purpose. These suggested policies and strategies for incorporation into public procurement in Ghana gave some thematic areas which have been presented in Table 4.2.

**Table 4. 2 Reported Public Procurement Policies and Strategies for CB of SMEBCs**

No.	Suggested PPP & Ss for CB of SMEBCs in Ghana
1	<i>Subcontracting arrangements with international companies</i>
2	<i>Provision of joint venture arrangements</i>
3	<i>Strict adherence to payment schedule of contracts</i>
4	<i>Classification and restriction of jobs for only local competitive bidding</i>
5	<i>Big contracts must be divided into smaller components</i>
6	<i>General requirement for local content in contracting</i>
7	<i>Closer collaborations with the contractor association</i>
8	<i>Extension of preferences to cover criteria for selection in favour of local contractors</i>
9	<i>Policy to encourage partnership of local contractors with international contractors</i>

*(Table 4.2 Continued)*

No.	Suggested PPP & Ss for CB of SMEBCs in Ghana
10	<i>Policy to encourage international contractors sublet percentages of contracts won to local contractors</i>

11	<i>Provision of margin of preference</i>
12	<i>Setting of proportionate requirements for contracts</i>
13	<i>Provision of local contents in tender evaluation criteria</i>
14	<i>Continuous training on the rules and regulations regarding public procurement</i>
15	<i>Networking among SME contractors</i>
16	<i>Provision of framework agreement in the works procurement</i>

Source: Author's fieldwork

These PPP & Ss were compared to those that were obtained from literature to avoid repetition, and to add onto the list the unique variables. These were subsequently presented in the Section C of the survey questionnaire (see Appendix 2) for evaluation by a larger respondent group. This has been presented in Section 4.3.4 and 4.3.4. Apart from the various policies and strategies that have been suggested by the various interviewees, they made it clear that the effect of these policies and strategies for capacity building of the target group (SMEBCs) will only be manifested if they are implemented and not when they just exist in books.

### 4.3 EVALUATION OF VARIABLES

The various views expressed by the interviewees on the subject and the literature reviewed became the variables that were put through the questionnaire survey (see Appendix 2). This was for the purposes of gaining a broader perspectives on the issues raised through the interviews and the literature review. The following sections present the results and discussions on the data that were collected through the questionnaire survey. A total number of 125 questionnaires were administered to respondents, who were involved in procurement of construction works in Ghana.

However, 80 questionnaires were retrieved and useable for analysis purposes, representing 64% response rate. The questionnaire was made up of Sections A, B, and C capturing respectively the Respondents' profile, Factors that affect the capacity of SMEBCs, and PPP & Ss for capacity building of SMEBCs in Ghana.

#### **4.3.1 Background of Respondents**

The results of the background information of the various respondents were analysed using descriptive analysis. This was aimed at presenting the background information of the various professionals who took part in the study. Indeed, knowing the background information of the respondents will help repose confidence in the reliability of the collected data. The background information of the respondents is captured under the following headings in Table 4.3:

- The kind of organisation a respondent works with;
- The respondent's profession/occupation;
- The respondent's status in his/her organization; and
- The respondent's years of experience in procurement of construction works

From Table 4.3, approximately 29% and 20% of the respondents who took part in the survey work respectively with consultancy firms, and public client organisations. More so, approximately 24% of the respondents work with D2/K2 construction firms, while approximately 18% and 10% of the respondents respectively work with D3/K3 and D4/K4 construction firms.

From Table 4.3, a majority of the respondents are Quantity Surveyors, representing approximately 58%. This was followed in terms of percentages by Project Managers, who represented 30% of the respondents, while Procurement Managers represented approximately 8% of the respondents. More so, approximately 24% of the respondents work with D2/K2 construction firms, while approximately 18% and 10% of the respondents respectively work with D3/K3 and D4/K4

construction firms.

**Table 4. 3 Background Information of Respondents**

Attributes	N	Frequency	Percentage
<b>Kind of Organization respondents work with</b>	80		
1. Public Client Organization		16	20
2. Consultancy firm		23	28.7
3. D2/K2 Construction Firm		19	23.8
4. D3/K3 Construction Firm		14	17.5
5. D4/K4 Construction Firm		8	10
<b>Profession/Occupation of Respondent</b>	80		
1. Quantity Surveyor		46	57.5
2. Project Manager		24	30
3. Procurement Manager		6	7.5
4. Others		4	5
<b>Respondents Status in the Organization</b>	80		
1. Director/Principal Partner		11	13.8
2. Associate partner		8	10
3. Senior Officer		59	73.8
4. Others		2	2.5
<b>Number of years involved in Public Procurement of Construction works</b>	80		
1. < 5 years		20	25
2. 5-10 years		36	45
3. > 10 years		24	30

Source: Author's fieldwork

With regard to respondents' relevant years of experience, the majority of the respondents have been involved in public procurement of construction works between 5 to 10 years, representing 45%. Indeed, 30% of the respondents have been involved in procurement of construction works over 10 years, while 25% of the respondents have had less than 5 years of experience with regard to procurement of construction works.

#### **4.3.2 FACTORS AFFECTING THE CAPACITY OF SMEBCS IN GHANA**

Respondents were asked to rank on a scale of 1 (Least) to 5 (Highest) the significance of the various factors that affect the (identified from both literature and the semi-structured interview) capacity of SMEBCs in Ghana. This was captured under Section B of the survey questionnaire. One sample t-test with a test value of 3.0 was used. The factors that did not meet the test criterion were discarded whereas those that met the test criterion were considered for further analysis (as presented in Section 4.3.3). In this regard, five (5) out of twenty seven (27) factors, namely, poor communication structures; inadequate access to public contracts; structure of the companies; unreliable material supply base; and high tendering cost were discarded. Hence, twenty two (22) of the factors were considered for further analysis.

#### **4.3.3 Factor Analysis (Factors Affecting the Capacity of SMEBCs in Ghana)**

In this section, the twenty two (22) factors affecting the capacity of SMEBCs that were retained in Section 4.3.2 above were subjected to further analysis using Principal Component Analysis (PCA). This made it possible, among other things, for the empirical relationships among the various variables to be statistically manipulated in order to reveal conjectural constructs of the relationships (Kreuger & Neumann, 2003; Field, 2005). Prior to the PCA, Kaiser-Meyer-Olkin (KMO) measure of sample adequacy, KMO-test was conducted. The sample adequacy test is passed when the KMO-test value is greater than 0.5 (Field, 2005). Consequently, the KMO measure of this study achieved a value of 0.727, indicating the adequacy of the sample for the factor analysis. Again, the Bartlett's test of sphericity was ascertained to be significant, indicating that the original correlation matrix was not an identity matrix, hence, there are some relationships between the variables that are intended to be included in the analysis (Field, 2005). Indeed,

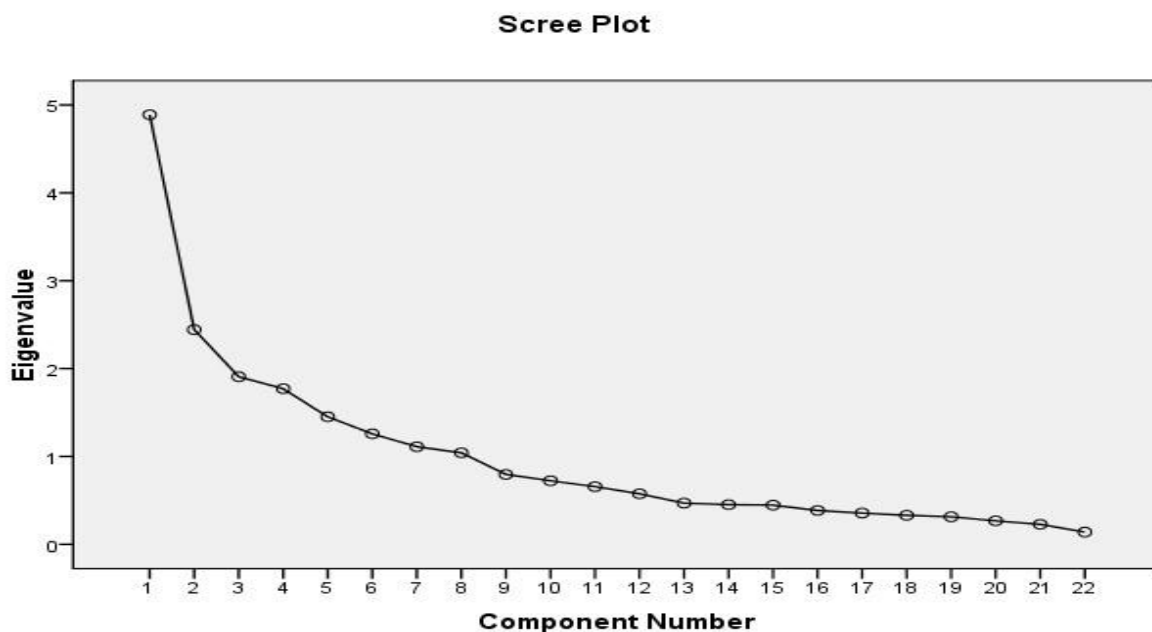
Bartlett's Test is highly significant ( $p < 0.001$ ), and therefore factor analysis is appropriate (Field, 2005; Ahadzie, 2007). Table 4.5 below presents both the KMO and Bartlett's Test values.

**Table 4. 4 KMO and Bartlett's Test: Factors Affecting the Capacity of SMEBCs**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		0.727
<b>Bartlett's Test of sphericity</b>	<b>Approx. Chi-Square</b>	670.569
	<b>df</b>	276
	<b>Sig.</b>	0.000

After establishing the sample adequacy of the data, and whether or not there exist some relationships among the variables to be included in the analysis, Principal Component Analysis (with Varimax rotation) was conducted. In Table 4.6, the rotated component matrix indicates that the fourteen (14) out of the original twenty two (22) variables could be the underlying themes of the four (4) principal components (using a cut-off point of 0.50). It is to be noted that in an earlier rotation 2 out of the 22 variables vis-à-vis: poor project preparation, and lack of material control systems loaded onto two factors which made the interpretation of the findings rather messy.

Subsequently, these variables were deleted and the PCA re-run. Thus, the findings presented in Table 4.6, on which the discussion is based, emerged after the second round of running the factor analysis. In the second round of the PCA, four (4) principal components with eigenvalues greater than 1, in line with the latent root criterion on the number of principal components were extracted (Field, 2005; Ahadzie, 2007).



**Figure 4. 2 Scree Plot for Factors Affecting the Capacity of SMEBCs**

Also, reading the Scree Plot that is presented in Figure 4.2 suggested that four components can be extracted to achieve the purpose of the analysis. The initial eigenvalues indicate that if all the factors are ranked, Principal Component 1 accounts for 22.228% of the variance, while Principal Component 2 accounts for 11.511% of the variance. More so, Principal Component 3 and 4 account for 8.868% and 8.297% respectively. In all, the four identified Principal Components account for 50.90.5% of the total variance explained (see Table 4.5).

**Table 4. 5 Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.446	22.228	22.228	4.446	22.228	22.228	3.365	16.825	16.825

2	2.302	11.511	33.740	2.302	11.511	33.740	2.545	12.725	29.549
3	1.774	8.868	42.608	1.774	8.868	42.608	2.207	11.036	40.585
4	1.659	8.297	50.905	1.659	8.297	50.905	2.064	10.320	50.905
5	1.425	7.126	58.031						
6	1.184	5.920	63.951						
7	1.047	5.237	69.189						
8	.915	4.573	73.762						
9	.767	3.833	77.595						
10	.690	3.450	81.046						
11	.560	2.801	83.846						
12	.513	2.563	86.410						
13	.464	2.322	88.732						
14	.449	2.245	90.977						
15	.416	2.079	93.056						
16	.367	1.834	94.890						
17	.325	1.623	96.513						
18	.302	1.508	98.021						
19	.235	1.176	99.197						
20	.161	.803	100.000						

**Extraction Method:** Principal Component Analysis

**Table 4. 6 Rotated Component Matrix<sup>a</sup>**

Factors Affecting the Capacity of SMEBCs	Component			
	1	2	3	4

Lack of entrepreneurial skills	0.695			
Lack of technical skills	0.678			
Lack of contractual and managerial skills	0.665			
Lack of financial management skills	0.663			
Inadequate supportive institutional arrangements	0.580			
Lack of training opportunities	0.561			
Weak enforcement of contract rules and regulations		0.747		
Non-payment of interest on delayed payments		0.654		
Lack of fair competition		0.568		
Limited access to credit			0.802	
High cost of construction inputs			0.763	
Delay in payments for work done			0.635	
Poor estimation practices				0.780
Poor monitoring and control				0.736
<b>Extraction Method:</b> Principal Component Analysis				
<b>Rotation Method:</b> Varimax with Kaiser Normalization				
<b>a.</b> Rotation converged in 6 iterations				

Based on the PCA and critical examination of inherent relationships among the various factors identified components were named. The names of various principal components were formed based on the factors with the highest loadings and the understanding of the relevance of these factors in the context of the study. The various principal components with their respective factor loadings (indicated in brackets) have been presented and discussed below:

### **Principal Component 1: Technical and Managerial Related Factors**

Six factors loaded were onto Principal Component 1. These are lack of entrepreneurial skills (0.695); lack of technical skills (0.678); lack of contractual and managerial skills (0.665), lack of financial management skills (0.663); inadequate supportive institutional arrangements (0.580); and lack of training opportunities (0.561) (see Table 4.6). The underlying themes that were loaded onto this principal component are mainly related to technical and managerial factors. Literature has revealed that most of the SMEBCs operate a personalised style of management without due regard to effective modern management practices and recruitment methods (Amoah, et al., 2011). This may cause them to recruit personnel who do not have the requisite technical and managerial skills. More so, the findings have revealed that there are inadequate supportive institutional arrangements and this has accounted for the low capacity of the indigenous construction firms, particularly SMEBCs. For this reason, lots of researchers and some contractors have called for the formation of an agency that will help address issues pertaining to the development of the Ghanaian construction industry (Ahadzie, 2009; Gyadu-Asiedu, 2009).

### **Principal Component 2: Procurement Related Factors**

The following factors loaded onto this principal component: weak enforcement of contract rules and regulations (0.747), non-payment of interest on delayed payments (0.654), and lack of fair competition (0.568) (see Table 4.6). The various factors loaded onto this principal component go to affirm the discrepancies in the Ghanaian public procurement that affect the capacity of contractors observed from literature (Anvuur , et al., 2006; Laryea, 2010; Donkor, 2011; Kheni, 2008). The literature review and semi-structured interview suggest that there is lack of fair competition, for instance in the award of contracts, where contracts are awarded to contractors who have political affiliations and not on meritorious grounds (Donkor, 2011). Indeed, one of the

interviewees decried how pretentious the Ghanaian public procurement is, where rules are only pretended to be followed (see Section 4.2.5). These lapses go a long way to pollute the business environment within which these SMEBCs operate and hence, stifle their development.

### **Principal Component 3: Financial Related Factors**

The following factors emerged: limited access to credit (0.802), high cost of construction inputs (0.763), and delay in payment for work done (0.635) (see Table 4.6). The various factors loaded on this component go directly or indirectly to affect the financial capacity of SMEBCs in Ghana. This tends to corroborate the assertion that finance is a constraining factor to contractor development (Cook & Nixon, 2000). Limited access to credit for instance, has been identified as a major factor that affect the financial capacity of SMEBCs as most of these contractors face a raft of challenges in accessing credits from banks (Cook & Nixon, 2000; Badu & Owusu-Manu, 2010). The situation gets exacerbated when contractors' capital gets eroded by delays in payment for work done, which has characterised most government projects (Eyiah, 2003). Indeed, one of the interviewees asserted *“Contractor capacity has been drastically eroded due to delay in payment of work done. Indeed, in some instances, it can take 3 to 4 years before a contractor is paid for work done”* (Informant's view). This goes in line with literature where delay in payment for work done has been identified as a factor that affects the capacity of contractors in Ghana and other parts of Africa (Amoah, et al., 2011; Laryea, 2010; Ofori, 2000; Bakar, et al., 2012).

### **Principal Component 4: Project Related Factors**

The following factors emerged: poor estimation practices (0.780), and poor monitoring and control (0.736) (see Table 4.6). According to Donkor (2011), these factors contribute to the failure of SME construction firms in Ghana. These factors are mainly associated with the estimation practices of the SMEBCs and how they monitor the resources available to them. Indeed, research has it that small

firms do not put into considerations the controlling of equipment cost and usage and employee's benefits and compensations which go a long way to affect their capacity Donkor (2011).

#### **4.3.4 PUBLIC PROCUREMENT POLICIES & STRATEGIES FOR CB OF SMEBCS**

Respondents were asked to rank on a scale of 1 (Not important) to 5 (Most important) the importance of the various PPP & Ss (identified from both literature and the semi-structured interview) for capacity building of SMEBCs in Ghana. This was captured under Section C of the survey questionnaire (see Appendix 2). One sample t-test with a test value of 3.5 was used. Again, the significance level was set at 95% in accordance with predictable risk levels (Ahadzie, 2007). Another criterion that was considered is the standard error; the standard deviation of sample means which measures how representative a sample is likely to be of the population (Field, 2005). According to Field (2005), a large value of standard error (compared to the sample mean) suggests a lot of variability between means of different samples whereas a small value suggests that most sample means are similar to the population mean and so the sample is likely to be an accurate reflection of the population.

The Table 4.7 below presents variables (12 of the 17 variables presented for the survey) that recorded mean values above the test mean of 3.5 and they are variables that were subjected to further analysis in Section 4.3.5. The standard error associated with all the means scores were closer to zero indicating that the sample chosen is an accurate reflection of the population (Field, 2005). Again, the results presented in Table 4.7, show that most of the standard deviations are less than 1.0, signalling that there is little variability in the data collected, and there is consistency in agreement among the respondents (*c.f.* Ahadzie, 2007; Field, 2005).

Table 4.

## 7 Results of T-Test showing One-Sample Statistics

PPP & Ss for CB of SMEBCs in Ghana	N	Mean	Std. Deviation	Std. Error Mean
Unbundling public contracts into smaller lots	80	3.51	1.079	0.121
Uniformity in tender and contract documentation	80	3.65	1.032	0.115
Setting targets for the proportion of contracts awarded	80	3.60	0.976	0.109
Encouraging collaborations among various stakeholders	80	3.64	0.958	0.107
Improving access to procurement information	80	3.79	0.910	0.102
Applying margin of preference for SME building contractors	80	3.59	0.882	0.099
Subcontracting arrangements for SME building contractors	80	3.55	0.810	0.091
Joint venture arrangements for SME building contractors	80	3.56	1.017	0.114
Streamlining procurement procedures to make them more transparent and standard	80	3.96	0.920	0.103
Providing general local content criteria in evaluation of tenders	80	3.80	0.877	0.098
Provision of framework agreements in the works procurement	80	3.61	0.921	0.103
Strict adherence to payment schedules of contracts	80	3.94	0.919	0.103

Source: Author's fieldwork

However, attention must be drawn to the variables, unbundling public contracts into smaller lots, uniformity in tender and contract documentation, and joint venture arrangements for SME building contractors who had standard deviations slightly more than one (1.079, 1.032, and 1.017 respectively) suggesting that there might be differences in how these variables were interpreted by

the respondents. The significance (that is, p-value) of each attribute is presented in Table 4.8. The p-value is for a two-tailed test, however as shown per the test hypothesis, what is of interest here is one-tailed test (that is, sample mean  $> 3.5$ ). Subsequently, the “sig.” value in Table 4.8 has been divided by two and the summary presented in Table 4.9.

**Table 4. 8 Results of One-Sample Test showing test significance**

PPP & Ss for CB of SMEBCs in Ghana	Test Value = 3.5					
	t	df	Sig. (2tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Unbundling public contracts into smaller lots	0.104	79	0.918	0.013	-0.23	0.25
Uniformity in tender and contract documentation	1.300	79	0.198	0.150	-0.08	0.38
Setting targets for the proportion of contracts awarded	0.917	79	0.362	0.100	-0.12	0.32
Encouraging collaborations among various stakeholders	1.284	79	0.203	0.138	-0.08	0.35
Improving access to procurement information	2.827	79	0.006	0.288	0.09	0.49
Applying margin of preference for SME building contractors	0.888	79	0.377	0.087	-0.11	0.28
Subcontracting arrangements for SME building contractors	0.552	79	0.582	0.050	-0.13	0.23
Joint venture arrangements for SME building contractors	0.550	79	0.584	0.062	-0.16	0.29
Streamlining procurement procedures to make them more transparent and standard	4.496	79	0.000	0.462	0.26	0.67

**Table 4.**

Providing general local content criteria in evaluation of tenders	3.059	79	0.003	0.300	0.10	0.50
Provision of framework agreements in the works procurement	1.093	79	0.278	0.112	-0.09	0.32
Strict adherence to payment schedules of contracts	4.259	79	0.000	0.438	0.23	0.64

Source: Author's fieldwork

**9 Results of t-test showing rankings and results of 1- tailed test.**

PPP & Ss for CB of SMEBCs in Ghana	Mean	Standard deviation	Ranking	Sig. (1tailed)
Unbundling public contracts into smaller lots	3.51	1.079	12 <sup>th</sup>	0.459
Uniformity in tender and contract documentation	3.65	1.032	5 <sup>th</sup>	0.099
Setting targets for the proportion of contracts awarded	3.60	0.976	8 <sup>th</sup>	0.181
Encouraging collaborations among various stakeholders	3.64	0.958	6 <sup>th</sup>	0.102
Improving access to procurement information	3.79	0.910	4 <sup>th</sup>	0.003
Applying margin of preference for SME building contractors	3.59	0.882	9 <sup>th</sup>	0.189
Subcontracting arrangements for SME building contractors	3.55	0.810	11 <sup>th</sup>	0.291
Joint venture arrangements for SME building contractors	3.56	1.017	10 <sup>th</sup>	0.292
Streamlining procurement procedures to make them more transparent and standard	3.96	0.920	1 <sup>st</sup>	0.000
Providing general local content criteria in evaluation of tenders	3.80	0.877	3 <sup>rd</sup>	0.002
Provision of framework agreements in the works procurement	3.61	0.921	7 <sup>th</sup>	0.139

Strict adherence to payment schedules of contracts	3.94	0.919	2 <sup>nd</sup>	0.000
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Source: Author's fieldwork

From the summary shown in Table 4.9, streamlining procurement procedures to make them more transparent and standard emerged as the highest ranked most important PPP & Ss for capacity building of SMEBCs in Ghana whilst unbundling of contracts into smaller lots emerged as the lowest. Again, from Table 4.9, strict adherence to payment schedules of contracts obtained the second ranking. A plausible explanation for this result is that in Ghana, delay in payment for work done is a major factor that has been the bane of contractor capacity erosion. Indeed, five of the interview respondents raised delay in payment for work done as a major factor affecting the capacity of SMEBCs in Ghana. Hence, it is believed that if procurement entities endeavour to adhere to payment schedules, they will in effect build the capacity of the SMEBCs.

Again, providing general local content criteria in evaluation of tenders, and improving access to procurement information were ranked respectively in the third (3<sup>rd</sup>) and fourth (4<sup>th</sup>). Note that even though, uniformity in tender and contract documentation (5<sup>th</sup>); encouraging collaborations among various stakeholders (6<sup>th</sup>); provision of framework agreements in the works procurement (7<sup>th</sup>); setting targets for the proportion of contracts awarded (8<sup>th</sup>); applying margin of preference (9<sup>th</sup>); joint venture arrangements (10<sup>th</sup>); subcontracting arrangements (11<sup>th</sup>); and unbundling public contracts into smaller lots (12<sup>th</sup>) are considered to be PPP & Ss that can help build the capacity of SMEBCs (Komu, et al., 2012; Eyiah, 2003; Esteves & Barclay, 2011; UNCTAD, 2013), the survey result shows that they are not statistically significant, since their “sig” values were above the “p” (that is, sig value >0.05) (see Table 4.9). It is however worthy of note that all of these variables obtained mean values greater than the hypothetical mean (3.50).

**Table 4.****4.3.5 Factor Analysis (Public Procurement Policies & Strategies for CB)**

The twelve (12) variables that met the test criterion (that is, mean > 3.50) in Section 4.3.4 were subjected to factor analysis (specifically, principal component analysis) with Varimax rotation. This made it possible to establish which of the variables could be measuring aspects of the same underlying dimension. The KMO test that was firstly conducted prior to the PCA recorded a value of 0.673, indicating the adequacy of the sample for the factor analysis. Again, the Bartlett's test of sphericity was ascertained to be significant ( $p < 0.001$ ), indicating that the original correlation matrix was not an identity matrix, hence, there are some relationships between the variables that are intended to be included in the analysis. Table 4.10 below presents both the KMO and Bartlett's Test values.

**10 KMO and Bartlett's Test: PPP & Ss for CB**

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</b>		0.673
<b>Bartlett's Test of sphericity</b>	<b>Approx. Chi-Square</b>	208.79
	<b>df</b>	66
	<b>Sig.</b>	0.000

In Table 4.12, the rotated component matrix indicates that all the twelve (12) variables could be the underlying themes of the four (4) principal components with eigenvalues greater than 1, in line with the latent root criterion on the number of principal components were extracted (using a cutoff point of 0.50). The Scree Plot and the Total variance explained of the analysis are respectively presented in Figure 4.3 and Table 4.11.

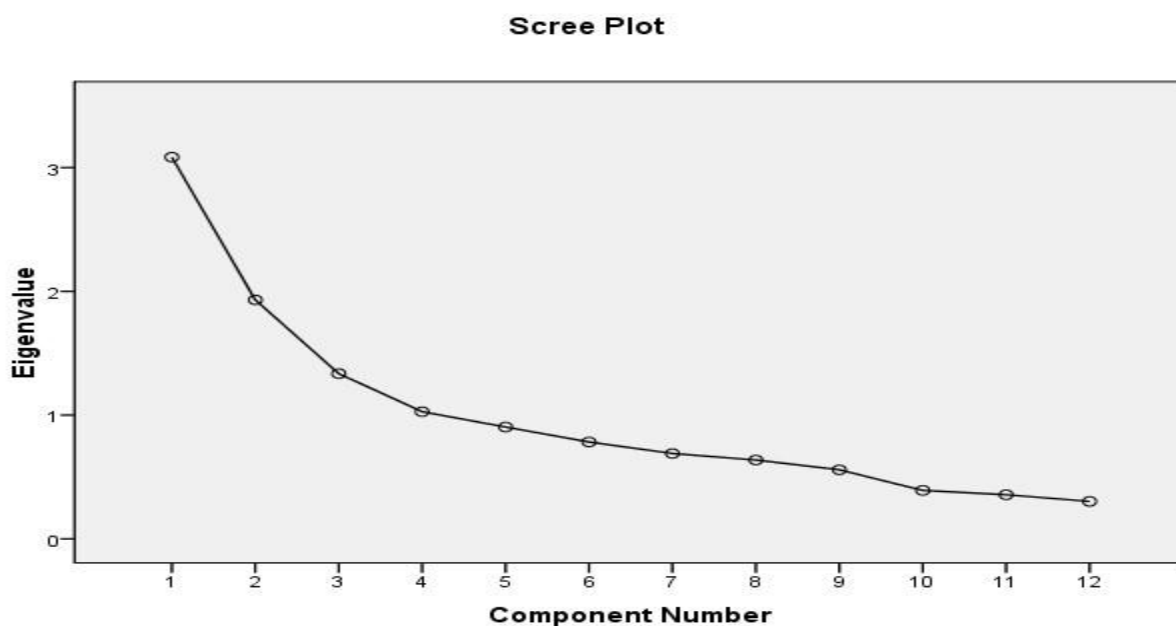


Figure 4. 3 Scree Plot for PPP &amp; Ss for CB of SMEBCs in Ghana

Table 4. 11 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.085	25.704	25.704	3.085	25.704	25.704	2.291	19.093	19.093
2	1.931	16.092	41.796	1.931	16.092	41.796	1.877	15.642	34.735
3	1.335	11.125	52.921	1.335	11.125	52.921	1.728	14.397	49.131
4	1.027	8.561	61.481	1.027	8.561	61.481	1.482	12.350	61.481
5	.904	7.530	69.011						
6	.783	6.522	75.533						

**Table 4.**

7	.690	5.747	81.281						
8	.637	5.311	86.591						
9	.558	4.652	91.244						
10	.392	3.264	94.508						
11	.356	2.969	97.477						
12	.303	2.523	100.000						
<b>Extraction Method:</b> Principal Component Analysis									

The initial eigenvalues indicate that if all the factors are ranked, Principal Component 1 accounts for 25.704% of the variance, while Principal Component 2 accounts for 16.092% of the variance. Also, Principal Component 3, and 4 account for 11.125%, and 8.561% respectively. In all, the four (4) principal components account for 61.481% of the total variance explained (see Table 4.11).

**Table 4. 12 Rotated Component Matrix<sup>a</sup>**

PPP & Ss for CB of SMEBCs	Component			
	1	2	3	4
Provision of framework agreements in the works procurement	0.833			
Providing general local content criteria in evaluation of tenders	0.715			
Streamlining procurement procedures to make them more transparent and standard	0.622			
Setting targets for the proportion of contracts awarded	0.528			
Subcontracting arrangements for SME building contractors		0.777		
Joint venture arrangements for SME building contractors		0.767		
Applying margin of preference for SME building contractors		0.553		
Encouraging collaborations among various stakeholders			0.758	
Improving access to procurement information			0.664	
Unbundling public contracts into smaller lots			0.626	
Strict adherence to payment schedules of contracts				0.754
Uniformity in tender and contract documentation				0.686
<b>Extraction Method:</b> Principal Component Analysis				
<b>Rotation Method:</b> Varimax with Kaiser Normalization				
<b>a.</b> Rotation converged in 18 iterations				

Based on the PCA and critical examination of inherent relationships among the various factors identified, the various principal components were named. The names of various principal components were formed based on the factors with the highest loadings and the understanding of the relevance of these factors in the context of the study. The various principal components with their respective factor loadings (indicated in brackets) have been presented and discussed below:

### Principal Component 1: Framework and Local Content Agreements

The following variables were loaded onto this principal component: provision of framework agreements in the works procurement (0.833); providing general local content criteria in evaluation of tenders (0.715); streamlining procurement procedures to make them more transparent and standard (0.622); and setting targets for the proportion of contracts awarded (0.528). While the “ttest” suggested that the respondents do not consider the variable providing framework agreements as significantly important for capacity building of SMEBCs in Ghana, the highest factor loading (0.833) it received under this principal component suggests that it could be an important variable for understanding the underlying PPP & Ss for capacity building. In the bid to developing SMEs in both developed and developing countries, the provision and facilitating of framework agreements in public procurement has been identified to be one of the means (Perry, 2011; Booth, 2013). Indeed, one of the interviewees made it known that *“currently framework agreement is being used in the supply of goods to some public institutions and therefore suggested that it can help build the capacity of SME Building Contractors in Ghana if it is applied in works procurement”* (Informant’s view).

Also, providing general local content criteria in evaluation of tenders is seen as a means for capacity building of SMEBCs in Ghana. Indeed, one of the interviewees suggested that local content criteria can be introduced into the evaluation of tenders, where a tenderer (foreign contractor) will receive a higher evaluation point if he demonstrates to employ a given percentage of Ghanaians or sublet a given percentage of the work to SMEBCs in Ghana. In Ghana, local content requirement is being ensured in the Oil and Gas Industry, and VRA for local contractors and suppliers (see Section 2.9). Really, if this is extended with regards to procurement of construction works in other sectors and

government procurement entities, it will help build the capacity of the SMEBCs. Another variable which is worth note in this cluster is streamlining procurement procedures to make them more transparent and standard. The “t-test” suggested that the respondents consider this variable as significantly important for capacity building of SMEBCs in Ghana. Besides, it was ranked first to all the observed variables. It is reasonable to assert that every procurement policy or strategy that is aimed at building the capacity of SMEBCs must be transparent enough to be effective. Indeed, several authors have revealed that contracts are awarded to contractors with political affiliations and how this is suffocating the construction industry (Donkor, 2011; Amoah, et al., 2011; Laryea, 2010). The various respondents therefore believe that if the procurement procedures are made to be transparent enough, it will create an enabling environment for the SMEBCs to conduct their businesses as required and thrive. This is in line with literature (Materu, 2001). This means that the object of the PPA which is to harmonise the processes of public procurement in the public service to secure a judicious, economic, and efficient use of state resources in public procurement and ensure that public procurement is carried out in a fair, transparent, and non-discriminatory manner must be adhered to (Public Procurement Act, 2003). An interviewee asserted that if the of capacity SMEBCs is to be built, the rules and regulations of public procurement must be followed strictly and it should not be pretentious. This will in turn reduce unfair practices in public procurement which preclude success of the SMEBCs in Ghana.

Setting targets for the proportion of contracts awarded is also seen as a means for building the capacity of SMEBCs in Ghana. This is where a government’s policy stipulates that a certain percentage of public contracts for every year would be awarded to SMEs. Perry (2011) identifies it as a means to improving SMEs’ access to public contracts. Depending on how effective the

implementation would be, this would help build the capacity of the SMEBCs in Ghana as this will make jobs available to them.

### **Principal Component 2: Subcontracting and Joint Venture Arrangements**

The following are the variables that were loaded onto this principal component: subcontracting arrangements (0.777), joint venture arrangements (0.767), and applying margin of preference (0.556). Subcontracting arrangements obtained the highest loading onto this principal component. Even though, the “t-test” suggested that subcontracting arrangement is not considered to be significantly important for capacity building, it has been identified as a means to building the capacity of SMEBCs in literature (see Table 4.9) (Komu, et al., 2012; Eyiah, 2003). For example, SMEBCs who work as subcontractors to foreign firms would be able to learn new things and improve their technical capacities. However, the ability of the SMEBCs to capitalise on the environment created by the subcontracting arrangement to build their capacity is based on their absorptive capacity, that is, their ability to absorb knowledge from the larger firms they work with and apply it in their future operations (Kamal & Flanagan, 2012). Another factor that obtained the second highest loading is joint venture arrangements which emphasises the link it has with subcontracting arrangements. Joint venture arrangement is seen as one of the means for capacity building of SMEBCs in Ghana. It is construed that the contractors involved will be able to pool resources in order to meet several procurement requirements. In addition, there can also be technology transfer among the contractors involved (Tennant & Fernie, 2010; Komu, et al., 2012). However, there are potential setbacks for its adoption which need to be mitigated in order to realise its benefits such as utilising it for financial capacity building purposes (Ahiaga-Dagbui, et al., 2011). Another factor that was loaded onto this principal component is applying margin of preference in favour of SMEBCs. In line with this, two of the interviewees revealed that the

margin of preference that is currently being allowed in tender evaluations is not sufficient for building the capacity of SMEBCs. This is because most of these local contractors do not meet most of the evaluation criteria to even get to the region where the margin of preference can be applied.

### **Principal Component 3: Collaborations and Access to Procurement Information**

Encouraging collaborations among various stakeholders (0.758), improving access to procurement information (0.664), and unbundling public contracts into smaller lots (0.626) are the variables that were loaded onto this principal component. Encouraging collaborations among various stakeholders has the highest factor loading with regards to this principal component. While the “ttest” suggested that the respondents do not consider this variable as significantly important for capacity building of SMEBCs in Ghana, the highest factor loading (0.833) it received under this principal component suggests that it could be an important variable for understanding the underlying PPP & Ss for capacity building. According to Esteves and Barclay (2011), linking local businesses to other service providers and agencies that promote technological innovation and provide access to finance will help them develop. However, the interdependency of the various stakeholders, through cooperation, coordination, or collaboration should be predicated upon a sound business case rather than on a utopian ideal of working better together (Tennant & Fernie, 2010). Improving access to procurement information is the variable that received the second highest factor loading under this cluster of PPP & Ss for capacity building of SMEBCs in Ghana. With regards to the ranking of the various PPP & Ss for capacity building, it obtained the fourth (4<sup>th</sup>) position (see Table 4.9). It reasonable to suggest that this variable is important for proper collaborations among parties in that they will get to know the necessary procurement requirement for proper collaborations. Again, improving access to procurement information will enable the

various SMEBCs to know procurement opportunities that are available to them per any job they would want to tender.

Lastly, unbundling of public contracts into smaller lots is one of the factors that were loaded onto this cluster of variables. It is believed that when big projects are divided/ unbundled into smaller lots, most of the SMEBCs will be able to meet the tender requirements that are set. Indeed, this approach has been suggested by many authors including Esteves and Barclay (2011), and Perry (2011). Again, three of the interviewees suggested that unbundling of contracts can be helpful in building the capacity of SMEBCs in Ghana. However, one of the interviewees questioned how it will not compromise on the issues of efficiency and economy of scale of public contracts. More so, the “t-test” that was conducted suggests that this variable is not considered as statistically important for capacity building by the various respondents. Besides, it was the least ranked variable among the various PPP & Ss that were observed (see Table 4.9).

#### **Principal Component 4: Prompt Payment for Work Done**

Strict adherence to payment schedules of contracts (0.754); and uniformity in tender and contract documentation (0.686). Apropos this principal component, only two of the factors were loaded onto it. Aggregately, they represent 8.561% of the total variance explained (see Table 4.11). One of the factors that were loaded onto this principal component is strict adherence to payment schedules of contracts. Indeed, it recorded the highest factor loading onto this principal component. More so, the “t-test” suggested that the respondents consider this variable as significantly important with the second (2<sup>nd</sup>) ranking of the observed PPP & Ss for capacity building of SMEBCs in Ghana. This is a key factor that needs to be considered if procurement is to be used to build the capacity of SMEBCs in Ghana. This will in effect tackle the delay in payment for work done that has

characterised most government projects (Amoah, et al., 2011; Donkor, 2011; Kheni, 2008; Laryea, 2010). Delay in payment for work done erodes for instance, the financial capacity of SMEBCs in Ghana which consequently makes them unable to acquire the needed resources including plant and equipment for their operations. For this reason, any policy that aims at helping to improve this phenomenon will go a long way to building the capacity of SMEBCs in Ghana.

Again, uniformity in tender and contract documentation is loaded onto this principal component. A plausible explanation for this is that when there is a considerable amount of uniformity in tender and contract documentation, it can help reduce long payment processes that go on before payments are made to contractors. Kheni (2008) stresses this point by revealing that the average number of documents required in order for a contractor to submit a tender that meets bidding requirements is in the region of 15 to 25. This can also contribute to the delays in honouring certificates for work done.

#### **4.4 FRAMEWORK DEVELOPMENT**

This section presents the proposed framework for capacity building of SMEBCs through public procurement in Ghana. The proposed Framework for CB of SMEBCs in Ghana diagnoses the significant factors affecting the capacity of SMEBCs in Ghana and attempts to propose public procurement policies and strategies that can help build the capacities of these contractors. It is expected that the proposed framework provides assistance for the major stakeholders of public procurement in Ghana, particularly policy makers to identify potential areas that SMEBCs lack capacity and the respective PPP & Ss that can be employed to help build their capacities. The framework is predicated upon the findings from the literature review, semi-structured interview, the questionnaire survey, and the overarching proposition of open systems theory espoused in

Section 3.5 (that is, *all elements of the model are open to influences from the external environment*).

The following sections elaborate on the various aspects of the framework:

#### 4.4.1 Framework Development Methodology

The problem solving methodology is the approach with which the proposed framework for CB of SMEBCs through public procurement was developed. Problem solving methodology is an approach to problem solving where a problem is tackled with the aim of rectification (*c.f.* Gamage, 2011). This approach has been applied successfully to various areas of research including construction (Gamage, 2011). Gamage (2011) employed the principles of Construction Process Improvement Methodology (CPIM) that was developed based on the traditional problem solving methodology by Serpell and Alarcon (1998) and the DRIVE (Define, Review, Identify, Verify, and Execute) technique to propose a Procurement Waste Minimisation Framework for Design and Build projects.

According to Gamage (2011), the key principles of the CPIM are: (1) a diagnostic of current issues; and (2) an identification of improvement measures (with the aim to forward improvement actions). This approach is employed to organise the results of this study, obtained from the findings of the literature review, interview, and questionnaire survey in a logical sequence. The findings of this research covered mainly a diagnosis/identification of the factors affecting the capacity of SMEBCs in Ghana, and an analysis and identification of improvement measures (that is, PPP & Ss that can help build/improve the capacity of SMEBCs in Ghana). Indeed, according to Gamage (2011), this approach to problem solving requires an implementation strategy for a comprehensive application. However, the implementation aspect of the various PPP & Ss does not form an integral part of the proposed framework even though, the research explores possible implementation strategies.

#### **4.4.2 Composition of the Framework**

The framework is made up of two basic parts vis-à-vis: the diagnosis (which covers the identified factors affecting the SMEBCs), and the identified PPP & Ss that can help build the capacity of SMEBCs. These parts of the framework have been elaborated under the following subheadings:

**Diagnosis:** the diagnosis captures the identified factors affecting the capacity of SMEBCs in Ghana. Indeed, from the findings of the research, these are major factors affecting the capacity of SMEBCs. Hence, it is believed that if improvement strategies are directed at mitigating them, it will go a long way in building the capacity of the SMEBCs. The various factors have been presented and discussed under Section 4.3.3. For the sake of clarity, the diagnosis component of the framework was presented separately in Figure 4.4 before linking it up with the improvement measures in Figure 4.5. The diagnosis is made up of financial, procurement, technical and managerial, and project related factors which are named respectively as A, B, C, and D in Figure 4.5.

**Improvement Measures:** this is captured as PPP & Ss for CB of SMEBCs. The identified PPP & Ss were linked to the diagnosis component of the framework. The PPP & Ss have been presented under subheadings 1, 2, 3, and 4. The subheadings are respectively framework and local content agreements, subcontracting and joint venture arrangements, collaborations and access to procurement information, and prompt payment for work done.

#### **4.4.3 Discussion of the Framework**

This section presents a discussion on the proposed framework (see Figure 4.5). As explained in Section 4.4.2 above, the proposed framework is made up of the diagnosis component and the improvement measures. The diagnosis component identifies factors affecting the capacity of

SMEBCs in Ghana. Indeed, this makes it possible for a case to be made for certain improvement measures to be adopted in order to mitigate the situation. From the analysis of the results of the study, it was revealed that the factors affecting the capacity of SMEBCs in Ghana stem from four main components. These are financial, procurement, technical and managerial, and project related factors. These factors explain the reason why most of the SMEBCs in Ghana lack capacity. It is therefore plausible to assert that if these factors are tackled, the capacity of the SMEBCs will be built. There are numerous strategies and approaches to address these challenges which have been espoused by several authors including Ahadzie (2009); Badu and Owusu-Manu (2010); Kululanga (2012); Dlungwana and Rwelamila (2004); and Eyiah (2003), however, this framework establishes public procurement policies and strategies that can help mitigate these challenges or factors. A public procurement policy or strategy established for this purpose can directly or indirectly mitigate a situation that is affecting the capacity of SMEBCs. For instance, one of the PPP & Ss that emerged first (1<sup>st</sup>) is strict adherence to payment schedule of contracts (refer to Table 4.9). Apparently, this is to cure the problems related to delays in payment for work done. Indeed, if any policy or strategy is to be instituted for capacity building of SMEBCs, payment schedules must be adhered to in order for them to obtain the requisite resources for their operations.

In addition, subcontracting and joint venture arrangements can also be used to help build the capacity of SMEBCs. It is believed that contractors who work as subcontractors for instance will be able to learn new things from the main contractors they work with. This will in turn help build their skills in areas such as managerial and technical. However, for this to yield a considerable result will depend on factors such as the relationship between these subcontractors and their main contractors. Again, when foreign contractors are encouraged to enter into joint venture agreements

with the local SMEBCs, they will be able to pool necessary resources for their operations. In Section 4.4.7, implementation strategies for the framework are proposed.

#### **4.4.4 Framework Validation**

The Framework for Capacity Building of SMEBCs in Ghana through public procurement that has been developed and presented in Figure 4.5 was based on the findings from the study (see Section 4.3). However, for validation purposes, the components (that is, the identified factors affecting the capacity of SMEBCs and the identified PPP & Ss) of the developed framework were sent to experts in the field of public procurement in Ghana to solicit their views with regards to the following, through semi-structured interviews:

- Clarity of the proposed framework structure;
- Information flow and appropriateness of the cluster of factors affecting the capacity of SMEBCs (A, B, C, and D);
- Appropriateness and practicality of the identified public procurement policies and strategies under (1, 2, 3, and 4); and
- Implementation strategies of the proposed framework (see Appendix 2 for the Framework Validation Interview Schedule).

The sections below present the results and discussions of the validation interview that was conducted. These have been presented under the headings as they appeared on the framework validation interview schedule (see Appendix 2).

#### 4.4.5 Background Information of Respondents

In all, five (5) respondents were chosen for the framework validation. Out of the five (5) interviewees who took part in the validation interview, three (3) of them took part in the first interview also whereas two (2) of them only took part in the validation interview. All the respondents are members of their respective professional bodies and have practiced in their respective fields in the construction industry as Quantity Surveyors, and Procurement Managers.

#### 4.4.6 Clarity and Information Flow of the Framework

Under this section, interviewees were asked to comment on the clarity of the framework structure, the information flow and appropriateness of the cluster of factors affecting the capacity of SMEBCs (A, B, C, and D), and the appropriateness and practicality of the identified public procurement policies and strategies under (1, 2, 3, and 4). On the clarity and information flow of the framework structure, the interviewees responded that the framework structure is clear. One of the interviewees however made a recommendation which has been incorporated in the framework presented in Figure 4.5. Again, one of the respondents commented on the clarity and information flow as follows: *“The Framework is clear and appropriate for implementation. It is consistent with regulation, law, and practice”* and that *“The information Flow in the Framework is appropriate”* (Informant's view).

With regard to the appropriateness of the various variables, the interviewees agreed with the factors identified under the cluster of factors affecting the capacity of SMEBCs in Ghana. This is also true for the PPP & Ss that have been grouped under 1, 2, 3, and 4.

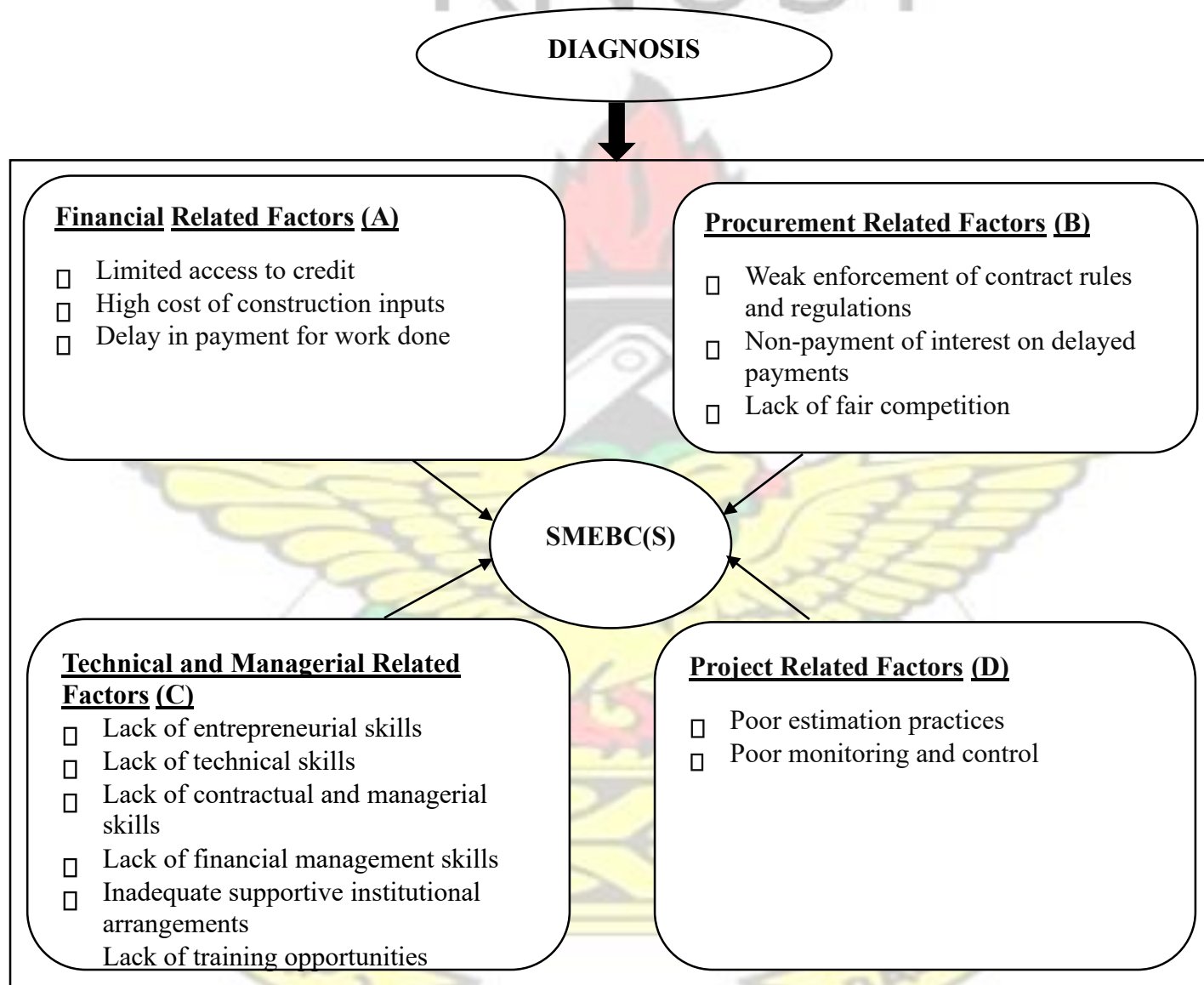
#### 4.4.7 Implementation Strategy for the Framework through validation

As hinted in Section 4.4.1, implementation strategies do not form integral part of the proposed framework. However, potential implementation strategies were explored during the validation interview. This section presents and discusses the implementation strategies that were suggested by the various interviewees. The following are the various implementation strategies that the respondents brought to the fore:

- Continuous professional training for the various procurement entities emerged as one of the ways in which the framework can be implemented. Indeed, one of the respondents opined that *“For public procurement to be directed at building the capacity of SMEBCs, the professionals with the various procurement entities should be trained continuously”* (Informant’s view).
- Manual development was suggested by two of the respondents as one of the means to implement the proposed framework. One of the interviewees puts it this way *“This can implemented through manual development by the regulatory bodies such as the Ministry of Finance through the Public Procurement Authority, and the various Public Procurement Entities to enable the various stakeholders to know the required steps to follow”* (Informant’s view).
- Again, all the respondents agreed that for payment schedules to be adhered to, approving authorities should make sure that the project funding is secured before project is awarded. An interviewee asserted that *“For concurrent approval of a project to be given for instance, there should be bank’s statement to show that there is money to undertake the project”* (Informant’s view).

- Incorporation of the various identified PPP & Ss into the Public Procurement Act 663 was also pointed out as one of the means for implementation of the proposed framework. Indeed, one of the respondents asserted that *“The issue of local content and margin of preference will have to receive legal approval to be effective for implementation and compliance by Procuring Entities and that its application may be limited to low value thresholds of procurement, that is, for routine and non-complex projects”* (Informant’s view).

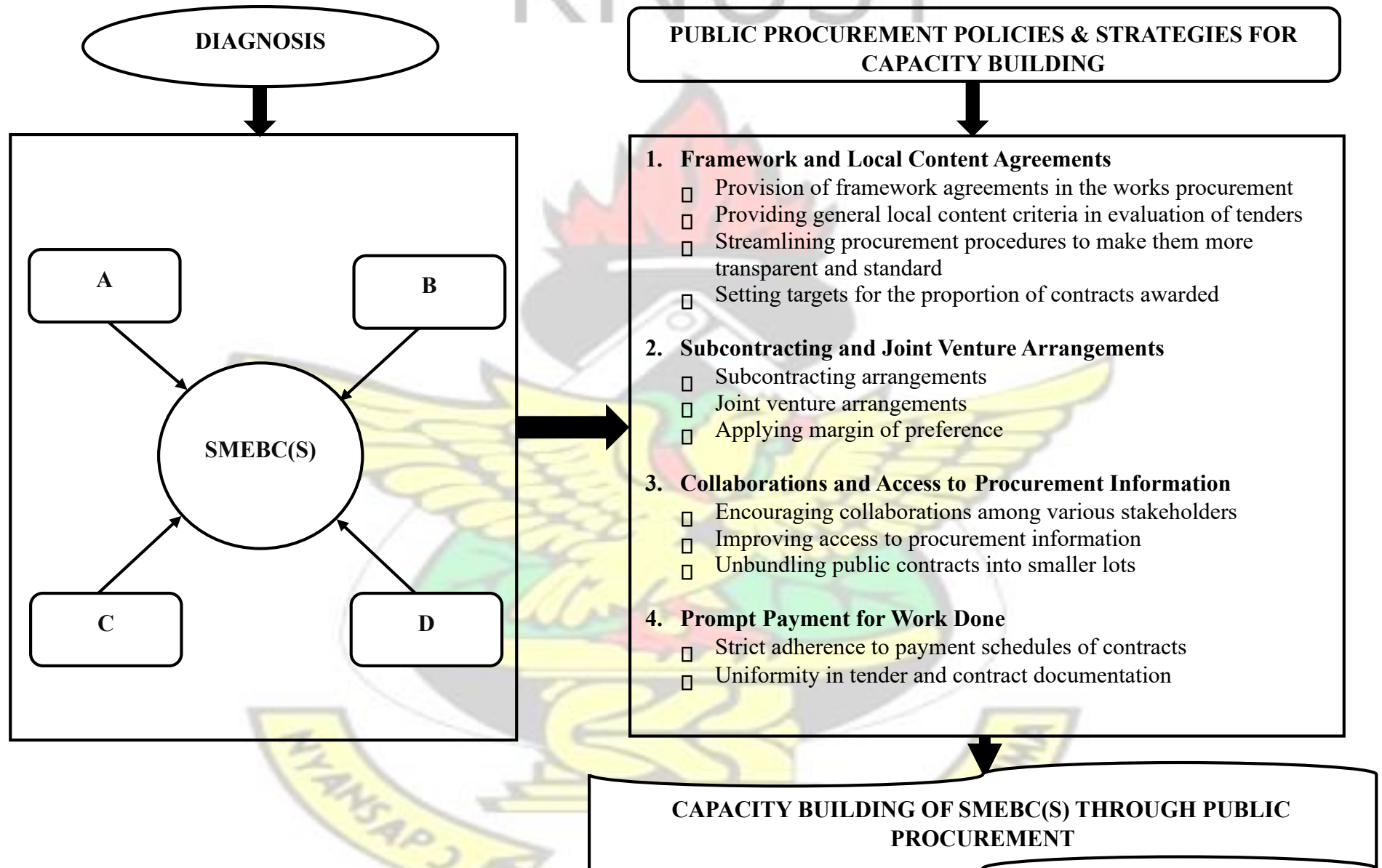




**Figure 4. 4 Diagnosis- Identified Factors Affecting the Capacity of SMEBCs in Ghana**

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**Figure 4. 5 Framework for CB of SMEBCs in Ghana through Public Procurement**



#### **4.5 CHAPTER SUMMARY**

This chapter has presented the analysis and discussion of the results of the semi-structured interview and the questionnaire survey that were conducted. After the chapter introduction, the responses of the semi-structured interview were presented and discussed. To this, stakeholders' understanding of capacity building, key areas that SMEBCs lack capacity, factors affecting the capacity of SMEBCs, and public procurement policies and strategies that can help build the capacity of SMEBCs in Ghana were elucidated. Again, there was also an evaluation of the various identified factors affecting the capacity of SMEBCs and the PPP & Ss for capacity building. This was by analysing the survey responses using descriptive statistics and factor analysis.

The chapter concluded with the development and presentation of the proposed Framework for CB of SMEBCs in Ghana through Public Procurement. In this regard, the approach adopted for the framework development was explained. The findings show the importance of public procurement for capacity building of SMEBCs in Ghana. Thus, public procurement can be used to create an enabling environment/opportunities for the SMEBCs to thrive. The next chapter captures the conclusions and the recommendations of the study.

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.1 INTRODUCTION**

The preceding chapters presented the General Introduction; Public Procurement and SMEBCs in Ghana; Research Methodology; and the Analysis and Discussion of Results. This chapter however brings to bare the general conclusions and recommendations from the findings of the study. This has been presented in several sections, capturing how this research has achieved its established aim and objectives; the key contribution of this research; the research limitations; and recommendations for industry, policy-makers and further research.

#### **5.2 ACHIEVEMENT OF THE RESEARCH AIM AND OBJECTIVES**

The aim of the research was to develop a framework for capacity building of SMEBCs in Ghana through public procurement. To achieve this aim, three specific objectives were set. The fulfilment of each of the objectives has been captured under the following sections:

##### **5.2.1 Fulfilment of the First Objective**

The first objective of the study was to identify factors affecting the capacity of SME Building Contractors in Ghana. This necessitated a thorough literature review in order to identify generally the potential factors that affect the capacity of SME construction firms in Africa, and Ghana in particular. Semi-structured interviews were also conducted in the bid to establishing factors that are peculiar to SMEBCs in Ghana. However, the various factors that emerged were further evaluated

through questionnaire survey which gave a broader perspective and aided in the establishment of the significant factors which have been presented in Section 4.3.2 and Section 4.3.3.

### **5.2.2 Fulfilment of the Second Objective**

The second objective of the study was to identify public procurement policies and strategies (PPP & Ss) that inure to building the capacity of SMEBCs in Ghana. This objective was executed by conducting a thorough literature review, semi-structured interviews in order to identify various procurement policies and strategies that can help build the capacity of SMEBCs. However, the various PPP & Ss that emerged were further evaluated through questionnaire survey which gave a broader perspective and aided in the establishment of the most important PPP & Ss that can help build the capacity of SMEBCs in Ghana.

### **5.2.3 Fulfilment of the Third Objective**

The third objective of the study was to develop a framework for CB of SMEBCs in Ghana through public procurement. Predicated upon open system thinking, the findings that emerged from the literature review, semi-structured interview, and the questionnaire survey were organised with the principles of problem solving methodology to develop the proposed framework. The framework is basically made up of two parts vis-à-vis: diagnosis (factors affecting the capacity of SMEBCs in Ghana), and improvement measures (that is, PPP & Ss for CB).

### **5.3 RESEARCH CONTRIBUTIONS**

This section presents the contributions that this research work has made through its outcomes. Indeed, these outcomes have not been offered by other studies and they have been presented in this section.



Firstly, the study has been able to bring to the fore the factors affecting the capacity of SMEBCs in Ghana. This will inform researchers and decision makers to study and propose solutions in order to address them.

Secondly, the study elucidates certain procurement policies and strategies that can help build the capacity of the local industry, particularly SMEBCs. This will be helpful in the nation's quest for adopting sustainable procurement which requires among other things developing the local industry through public procurement.

Lastly, the study came out with a simple framework that brings out the factors affecting the capacity of SMEBCs and PPP & Ss that can be used to help build their capacity, where possible implementation strategies for the proposed PPP & Ss were also explored.

#### **5.4 RESEARCH LIMITATIONS**

There were some limitations in the conduct of the study which need to be brought to the fore. Firstly, there was a great difficulty of reaching respondents for face-to-face interviews, as the respondents had busy schedules which made them make several postponements. This is a key reason for limiting the study sample, particularly for interviews considering the available time and resources. Secondly, there is a possibility of sampling and measurement errors and the effects of these errors on the data collected.

Thirdly, the proposed framework development was limited to public procurement. The framework did not make implementation strategies an integral part, that is, how the procurement policies and strategies can be achieved even though implementation strategies were explored during the framework validation interview. Finally, limitations emanating from the nature of the questions/topic being investigated are acknowledged.

## 5.5 RECOMMENDATIONS

The findings and conclusions of this study have made it possible for a number of recommendations to be made to policy makers, industry players and further research in order to improve current practices. These have been covered under the following sections:

### 5.5.1 Policy Makers

This study reports that public procurement can be very instrumental in building the capacity of local contractors particularly, SMEBCs in Ghana. Thus, policy makers should among other things, institute measures that will make sure the object of the ACT 663 is achieved at all levels of public procurement *“To harmonise the processes of public procurement in the public service to secure a judicious, economic and efficient use of state resources in public procurement and ensure that public procurement is carried out in a fair, transparent and non-discriminatory manner”*. This will ensure that procurement principles are adhered to create an enabling environment for SMEBCs to thrive. Again, for the capacity of the various SMEBCs in the Ghanaian construction industry to be built, public procurement policy makers should make conscious efforts to formulate and implement procurement policies and strategies that can create an enabling environment or opportunities for them.

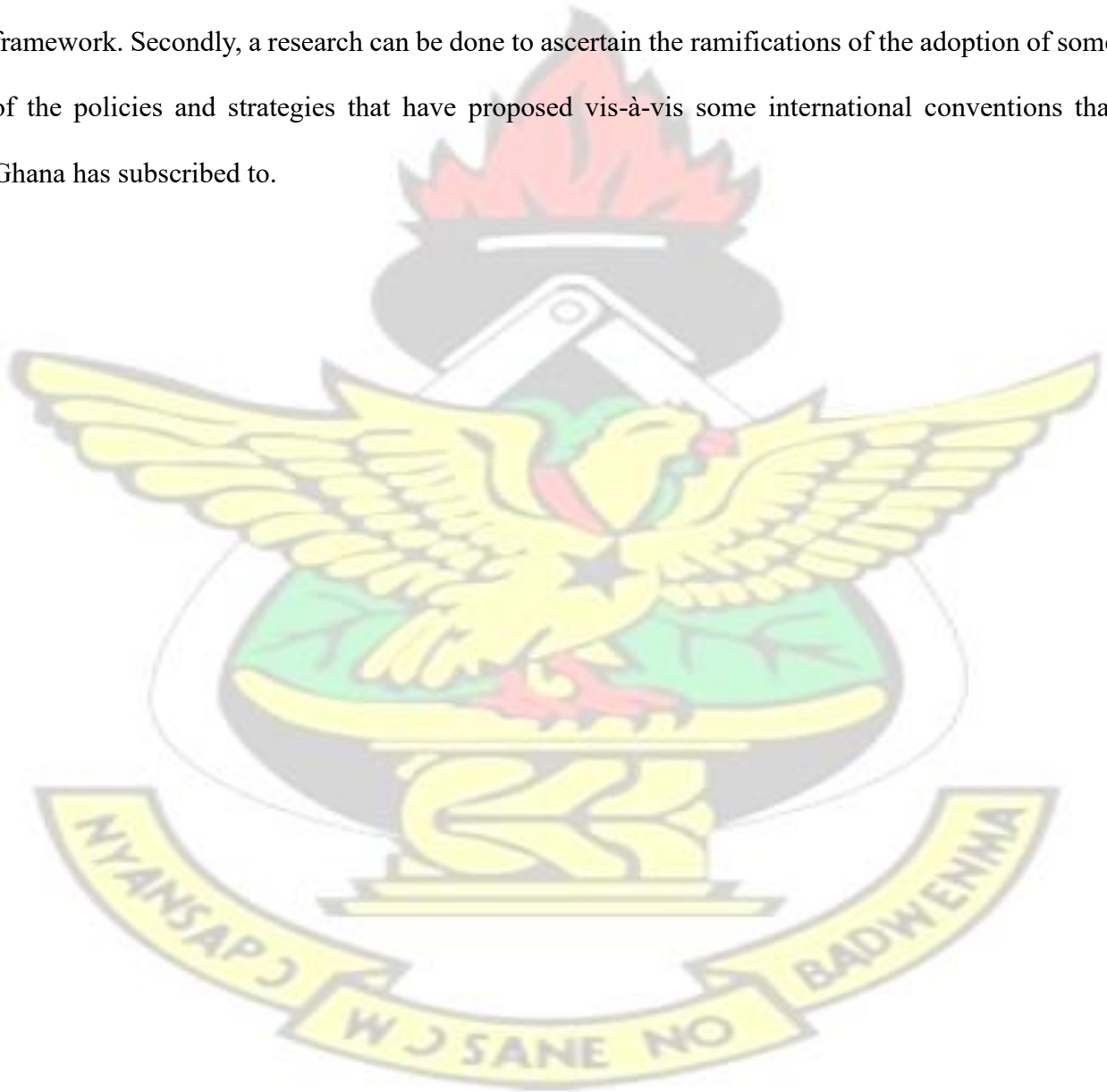
### 5.5.2 Industry

There is the need for establishing an industry regulatory body that will among other things regulate the construction industry, help in the development of the construction industry, and to liaise with the major stakeholders in the industry (including client organisations, consultants, research, and academic institutions). From the study, it can be recommended that SMEBCs in Ghana need to

position themselves well to build their capacities in all relevant areas needed for successful operations.

### **5.5.3 Further Research**

The following areas are recommended for further studies: Firstly, it is recommended that further studies should be conducted in order to ascertain the barriers to the implementation of the proposed framework. Secondly, a research can be done to ascertain the ramifications of the adoption of some of the policies and strategies that have been proposed vis-à-vis some international conventions that Ghana has subscribed to.



## REFERENCES

- Abor, J. & Quartey, P., (2010): Issues in SME Development in Ghana and South Africa. *International Research Journal of Finance and Economics*, ISSN 1450-2887(39), pp. 218228.
- Agyepong, A. S., (2012): Are Contractor Classifications in Ghana Accurate?. *The Quantity Surveyor: An Official Magazine of the Quantity Surveying Division of the Ghana Institution of Surveyors*, Issue 1.
- Ahadzie, D. K., (2007): *Model for Predicting the Performance of Project Managers at the Construction Phase of the Mass House Building Projects*, s.l.: [http://wlv.openrepository.com/wlv/bitstream/2436/15393/2/Ahadzie\\_PhD%20thesis.pdf](http://wlv.openrepository.com/wlv/bitstream/2436/15393/2/Ahadzie_PhD%20thesis.pdf).
- Ahadzie, D. K., (2009): *Ghanaweb*. [Online] Available at: <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=170462> [Accessed 10 February 2014].
- Ahiaga-Dagbui, D. D., Fugar, F. D. K., McCarter, J. W. & Adinyira, E., (2011): *Potential Risks to International Joint Ventures in Developing Economies: The Ghanaian Construction Industry Experience*. Hanoi, Vietnam, In Uwakweh B.O (Ed) Proceedings of the CIBW 107 Conference on Innovation and Sustainable Construction in Developing Countries [1-3 November].
- Amagoh, F., (2008): Perspectives on Organizational Change: Systems and Complexity Theories. *The Innovation Journal: The Public Sector Innovation Journal*, 13(3).
- Amoah, P., Ahadzie, D. K. & Danso, A., (2011): The factors affecting construction performance in Ghana: The perspective of small-scale building contractors. *The Ghana Surveyor*, 4(1), pp. 41-48.
- Ampadu-Asiamah, A. D. & Ampadu-Asiamah, O. K., (2013): Management of Government Funded Construction Projects in Ghana: Stakeholders' Perspective of Causes of Delays in Construction of Public Buildings. *Developing Country Studies*, 3(12), pp. 149-156.
- Anaman, K. A. & Osei-Amponsah, C., (2007): *Construction Management and Economics*, Volume 25, pp. 951-961.
- Anvuur, A., Kumaraswamy, M. & Male, S., (2006): *Taking forward Public Procurement Reforms in Ghana: Construction in Developing Economies-New Issues and Challenges*. Santiago, Chile, CIB W107 Construction in Developing Countries International Symposium.
- Ashmos, D. P. & Huber, G. P., (1987): The Systems Paradigm in Organisation Theory Correcting the Record and Suggesting the Future. *Academy of Management Review*, 12(4), pp. 607-621.

- Astbrink, G. & Tibben, W., (2013): The role of Public Procurement in Improving Accessibility to ICT. *Telecommunications Journal of Australia*, Swinburne University of Technology, 63(2), pp. 21.1-21.7.
- Atkinson, R. & Flint, J., (2001): *Accessing Hidden and Hard-To-Reach Populations: Snowball Research Strategies*, *University of Social Research Update*, 33. [Online] Available at: <http://sru.soc.surrey.ac.uk/SRU33.html> [Accessed 11 04 2014].
- Ayanda, A. & Laraba, S., (2011): Small and Medium Enterprises as a Survival Strategy for Employment Generation in Nigeria. *Journal of Sustainable Development*, 4(1), p. 200.
- Ayarkwa, J., Agyekum, K. & Adinyira, E., (n.d): *Exploring Waste Minimization Measures in the Ghanaian Construction Industry*. s.l., s.n.
- Ayarkwa, J., Dansoh, A. & Amoah, P., (2010): Barriers to Implementation of EMS in Construction Industry in Ghana. *International Journal of Engineering Science*, 2(4), pp. 37-45.
- Ayyagari, M., Beck, T. & Demirguc-Kunt, A., (2007): Small and Medium Enterprises Across the Globe. *Small Business Economics*, 29(4), pp. 415-434.
- Badu, E., Edwards, D. J. & Owusu-Manu, D., (2012): Trade Credit and Supply Chain Delivery in the Ghanaian Construction Industry: Analysis of Vendor Interactions with Small to Medium Enterprises. *Journal of Engineering Design and Technology*, 10(3), pp. 360-379.
- Badu, E. & Owusu-Manu, D., (2010): Improving Access to Construction Finance in Ghana. *The Journal of Business and Enterprise Development*, *School of Business*, Volume 2, pp. 111128.
- Bakar, A. H. A., Tabassi, A. A., Razak, A. A. & Yusof, M. N., (2012): Key Factors Contributing to Growth of Construction Companies: A Malaysian Experience. *World Applied Sciences Journal*, 19(9), pp. 1295-1304.
- Bashuna, A., (2013): Factors Affecting Effective Management of the Procurement Function at Nakuru North Sub-County. *International Journal of Business & Management*, 1(7), pp. 262-291.
- Bernard, H. R., (2000): *Social Research Methods*. London: Sage Publication.
- Booth, L., (2013): Public Procurement: Small Businesses and Savings. *Economic Policy and Statistics, Library, House of Commons*, Volume SN/EP/6069.
- Brammer, S. & Walker, H., (2007): Sustainable Procurement Practice in the Public Sector: An International Comparative Study. *University of Bath School of Management, School of Management Claverton Down Bath*.
- Brammer, S. & Walker, H., (2010): Sustainable Procurement in the Public Sector: An International Comparative Study. *International Journal of Operations & Production Management*, 31(4,2011), pp. 452-476.

- Bryman, A., (2004): *Social Research Methods*. 2 nd ed. Oxford: Oxford University Press.
- Chen, D. & Stroup, W., (1993): General System Theory: Towards a Conceptual Framework for Science and Technology Education for All. *Journal of Science Education and Technology*, 2(3), pp. 447-459.
- Cook, P. & Nixon, F., (2000): *Finance and Small and Medium-Sized Enterprise Development*. s.l., Institute for Development Policy and Management, University of Manchester.
- Creswell, J. W., (2003): *Research Design: Qualitative, Quantitative, and Mixed Methods Approach*. 2 ed. Thousand Oaks, California: Sage Publications.
- Creswell, J. W. & Clark, V. L. P., (2007): *Designing and Conducting Mixed Methods Research*. Calif, University of Nebraska-Lincoln: Sage Publications, Inc.
- Danso, F. O., (2010): *Occupational Health and Safety Issues Involving Casual Workers on Building Construction Sites in Ghana, A Kumasi study*, Kumasi, Ghana: Unpublished MSc Thesis, Faculty of Architecture and Building Technology Library, KNUST.
- Denscombe, M., (2007): *The Good Research Guide for Small-Scale Social Research Projects*. 3 ed. Poland EU: The McGraw-Hill Companies.
- Denzin, N. K. & Lincoln, Y. S., (2000): *Handbook of Qualitative Research*.. California: Sage Publications.
- Dlungwana, S. W. & Rwelamila, P. D., (2004): *Contractor Development Models that meet the Challenges of Globalisation- A Case for Development Management Capability of Local Contractors*. Rotterdam, Netherlands, Contractors, Conference Paper on Globalisation and Construction.
- Donkor, S., (2011): *Determinants of Business Failure: The Perspective of SME building Contractors in Ghanaian Construction Industry*, Kumasi, Ghana: Unpublished MSc Thesis, Faculty of Architecture and Building Technology Library, KNUST.
- Easterby-Smith, M., Thorpe, R. & Lowe, A., (2002): *Management Research: An Introduction*. 2nd ed. London: Sage Publications.
- Edler, J. & Georghiou, L., (2007): Public Procurement and Innovation-Resurrecting the Demand Side. *Research Policy*, Volume 36 (7), pp. 949-963.
- Egbu, C. O., (2000): *Knowledge Management in Construction SMEs: Coping with the Issues of Structure*. Glasgow Caledonian University, In: Akintoye, A (Ed.), 16th Annual ARCOM Conference, [6-8th September], Association of Researchers in Construction.
- Emery, M., (2004): Open Systems Theory: Implication for Development and Learning. In: J. J. Boonstra, ed. *Dynamics of Organizational Change and Learning*. Fred Emery Institute, Melbourne, Australia: John Wiley & Sons, Ltd, pp. 43-69.

- Enemark, S., (2003): *Understanding the Concept of Capacity Building and the Nature of Land Administration Systems*, Paris, France: TS2 Best Practice in Capacity Building [13-17th April].
- Esteves, A. M. & Barclay, M.-A., (2011): Enhancing the Benefits of Local Content: Integrating Social and Economic Impact Assessment into Procurement Strategies. *Impact Assessment and Project Appraisal*, 29(3), pp. 205-215.
- European Commission, (2003). *User Guide to the SME Definition*. Luxembourg: European Commission.
- Eyiah, A. K., (2003): *Construction Bank in a Developing Country: The Way Forward*. University of Brighton., In: Greenwood, D J (Ed.), 19th Annual ARCOM Conference, [3-5 September], Association of Association of Researchers in Construction Management, Vol. 1, 329-35..
- Eyiah, K. A. & Cook, P., (2003): Financing Small and Medium Scale Contractors in Developing Countries: A Ghana case. *Construction Management and Economics*, Volume 21, pp. 357367.
- Field, A., (2005): *Discovering Statistics Using SPSS*. 2nd ed. London: Sage Publications.
- Fitzgerald, B. & Howcroft, D., (1998): Towards DIssolution of the IS Research Debates: From Polarisation to Polarity. *Journal of Information Technology*, 13(4), pp. 313-326.
- Fowler, J. & Floyd, J., (1995): *Improving Survey Questions: Design and Evaluation*. Thousand Oaks, CA: Sage Publications.
- Fugar, F. D. & Agyakwah-Baah, A. B., (2010): Delays in Building Construction Projects in Ghana. *Australasian Journal of Construction Economics and Building*, 10 ((1/2) ), p. 103.116.
- Fugar, F. D. K., Ashiboe-Mensah, N. A. & Adinyira, E., (2013): Human Capital Theory: Implications for the Ghanaian Construction Industry Development. *Journal of Construction Project Management and Innovation*, 3(1), pp. 464-479.
- Gamage, I. S. W., (2011): *Waste Minimisation Framework for Procurement of Design and Build Construction Projects*, s.l.: A Doctoral Thesis submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy of Loughborough University.
- Govender, J. N. & Watermeyer, R. B., (2000): *Potential Procurement Strategies for Construction Industry Development in the SADC Region*, s.l.: Procurement strategies in SADC region.
- Gyadu-Asiedu, W., (2009): *Assessing Construction Project Performance in Ghana: Modelling Practitioners' and Clients' Perspectives*, s.l.: Doctorate Thesis Submitted to the Technology University of Eindhoven for the Award of Doctorate Degree.
- Hirsjärvi , S., Remes , P. & Sajavaara, P., (1997): *Explore and Write*. Helsinki: Book Corporation.

- Humphrey, S., (2005): *Construction Procurement and Profit: An Analysis of the Relationship from a Contractor's Perspective*, UK: Loughborough University.
- Israel, G. D., (2013): *Determining Sample Size*. [Online] Available at: <http://edis.ifas.ufl.edu> [Accessed 3rd February 2015].
- Ivanko, S., (2013): *Modern Theory of Organisation*, Ljubljana: University of Ljubljana, Faculty of Public Administration .
- Kalubanga, M., (2012): Sustainable Procurement: Concept, and Practical Implications for the Procurement Process. *International Journal of Economics and Management Sciences*, 1(7), pp. 1-7.
- Kamal, M. E. & Flanagan, R., (2012): Understanding Absorptive Capacity in Malaysian small and Medium Sized (SME) Construction Companies. *Journal of Engineering, Design and Technology*, 10(2), pp. 180-198 .
- Kast, F. E. & Rosenzweig, J. E., (1972): General Systems Theory: Application for Organisation Management. *Academy of Management Journal*, pp. 447-465.
- Kayanula , D. & Quartey, . P., (2000): The Policy Environment for Promoting Small and MediumSized Enterprises in Ghana and Malawi. *Finance and Development Working Paper Series*, Volume 15, pp. 1-27.
- Khan, R. A., (2008): *Role of Construction Sector in Economic Growth: Empirical Evidence from Pakistan*. Karachi, Pakistan, ICCIDC-I.
- Kheni, N. A., (2008): *Impact of Health and Safety Management on Safety Performance of Small and Medium-Sized Construction Businesses in Ghana*, UK: A Doctoral Thesis submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy of Loughborough University.
- Kheni, N. A., Andy , R. J. D. & Gibb, A., (2008): Health and Safety Management in Developing Countries: A Study of Construction SMEs in Ghana. *Construction Management and Economics*, 26(11), pp. 1159-1169.
- Komu, N. S., Kikwasi, G. J. & Thwala, W. D., (2012): *Assessment of Management Contracting Procurement System Towards Enhancing Capacity Building for Small and Medium Contractors in Tanzania*. Elmina, Ghana, In: Nani G., Nkum R.K., Awere E., Kissi, E and Bamfo-Agyei, E. (Eds) Procs 1st Applied Research Conference in Africa. (ARCA) Conference, [29-31th August].
- Kreuger, W. L. & Neumann, W. L., (2003): *Social Work Research Methods: Qualitative and Quantitative Applications*. s.l.:s.n.

- Kululanga, G., (2012): Capacity building of Construction Industries in Sub-Saharan Developing Countries: A case for Malawi. *Engineering, Construction and Architectural Management*, 19(1), pp. 86-100.
- Laryea, S., (2010): *Challenges and Opportunities Facing Contractors in Ghana*. Accra, Ghana, In: Laryea, S., Leiringer, R. and Hughes, W. (Eds) Procs West Africa Built Environment Research (WABER) Conference, [27-28 July] 215-226..
- Lloyd, R. E. & McCue, C. P., (2004): *What is Procurement? Definitional Problem and Implications*. s.l., International Public Procurement Conference Proceeding, Volume 3.
- Maisel, R. & Persell, C. H., (1996): *How Sampling Works*, Thousand Oaks. California.: Pine Forge Press.
- Materu, S., (2001): *Towards Sustainable Local Contracting Capacity – CRB*, Tanzania: Contractors Registration Board.
- McCrudden, C., (2004): Using Public Procurement to Achieve Social Outcomes. *Natural Resources Forum*, Volume 28, p. 257–267.
- McIntyre, L. J., (1999): *The Practical Skeptic: Core Concepts in Sociology*. Mountain View, CA: Mayfiel Publishing International, 311, 6997, 109-112.
- Morgan, P., (2006): The Concept of Capacity. *European Centre for Development Policy Management*, pp. 1-19.
- Naing, L., Winn, T. & Rusli, B. N., (2006): Practical Issues in Calculating the Sample Size for Prevalence Studies. *Archives of Orofacial Sciences*, Volume 1, pp. 9-14.
- Naoum, S. G., (2002): *Dissertation Research and Writing for Construction Students*. Oxford: Butterworth-Heinemann.
- Ntuli, B. & Allopi, D., (2013): Capacity Challenges Facing Civil Engineering Contractors in Kwazulu - Natal, South Africa. *International Journal of Engineering and Innovative Technology (IJEIT)*, 2(11), pp. 90-97.
- Odhiambo, W. & Kamau, P., (2003): *Public Procurement: Lessons from KENYA, TANZANIA AND UGANDA*, s.l.: OECD, Working Paper No. 208.
- Ofori, G., (2000): *Challenges of Construction Industries in Developing Countries: Lessons from Various Countries*. Gaborone, Wiley, 2nd International Confrence on Construction in Developing Countries: Chalenges facing the construction industry in developing countries, pp. 15-17.
- Ofori, G., (2007): Construction in Developing Countries. *Construction Management and Economics*, 25(1), pp. 1-6.

- Ofori, G., (2012): *Developing the Construction Industry in Ghana: the case for a central agency*, Singapore: Singapore University Press.
- Ofori, G. & Toor, S., (2012): *Leadership Development for Construction SMES*. Rheden the Netherlands [10-12th July], Working Paper Proceedings: Engineering Project Organisations Conference.
- Osei-Owusu, J. Y. & Gyapong, E. A., (2013): Assessing the Role of the Public Procurement Act, 2003 (Act 663) in Procuring Goods, Works and Services in a Public Institution: The Case of Kumasi Polytechnic. *Africa Development and Resources Research Institute*, 2(2), pp. 3755.
- Osei, V., (2013): The Construction Industry and its Linkages to the Ghanaian Economy-Policies to Improve the Sector's Performance. *International Journal of Development and Economic Sustainability*, 1(1), pp. 56-72.
- Pagano, R. R., (2007): *Understanding Statistics in the Behavioral Sciences*. 8 ed. Belmont, CA 94002- 3098, USA: Thomson Wadsworth.
- Perry, C., (2011): Supporting SME Access to Public Procurement Opportunities. *Northern Ireland Assembly, Research and Information Service*, Volume NIAR 712-11, pp. 1-19.
- Public Expenditure and Financial Accountability , (2009): *Public Financial Management Performance Assessment Report Volume 1*, s.l.: : Central Government, EUROPEAID/119860/C/SV/multi Framework contract Beneficiaries – Lot n°Macro Economy, Statistic and Public Finance Management Contract for Service No. 2009/209032.
- Public Procurement Act, (2003):. *Act 663*, s.l.: Republic of Ghana.
- Saeidi, S., (2002): Research Approaches and Data Collection Techniques. *Leeds Metropolitan University Skills for Learning*, pp. 1-62.
- Salant, P. & Dillman, D. A., (1994): *How to Conduct your Own Survey*. New York: John Wiley and Sons.
- Saunders, M., Lewis, P. & Thornhill, A., (2007): *Research Methods for Business Students*. 4 ed. Harlow: Financial Times Prentice.
- Schapper, P. R., Malta, V. J. N. & Gilbert, D. L., (2006): An Analytical Framework for the Management and Reform of Public Procurement. *Journal of Public Procurement*, 6(1&3), pp. 1-26.
- Snider, K. F. & Rendon, R. G., (2008): Public Procurement Policy: Implications for Theory and Practice. *Journal of Public Procurement*, 8(3), pp. 310-333.
- Sourani, A. & Sohail, M., (2010): Barriers to addressing sustainable construction in public procurement strategies. *Engineering Sustainability*, 164(ES4), pp. 229-237.

- State of the Nation's Address, (2014): *peacefmonline.com*. [Online] [Accessed 2014].
- Tennant, A. & Fernie, S., (2010): *A Contemporary Examination of Framework Agreements*. Leeds, UK, Association of Researchers in Construction Management, Egbu, C. (Ed) Procs 26th Annual ARCOM Conference, [6-8 September], 2010.
- Thai, K. V., (2001): Public Procurement Re-Examined. *Journal of Public Procurement*, 1(1), pp. 9-50.
- Thien, L. M. & Razak, N. A., (2012): A Proposed Framework of School Organisation from Open System and Multilevel Theories. *World Applied Sciences Journal*, 20(6), pp. 889-899.
- Thwala, W. D. & Phaladi, M. J., (2009): *An Exploratory Study of Problems Facing Emerging Contractors in the North West Province of South Africa*. Livingstone -Zambia, Proceedings 4th Built Environment Conference [17-19th May]: An exploratory study of problems facing emerging.
- Tokuori, T., (2010): *Possible Obstacles Impeding the Growth of Construction Related-SMEs in Sub-Saharan Africa: Preliminary study on the impact of infrastructure investment in the construction industry of Burkina Faso*, Chosakenyu Hokokusho, Institute of Development Economics: African Producers in the New trend of Globalization: An Interim Report.
- UNCTAD, (2013): *Promoting local IT Sector Development through Public Procurement*, s.l.: United Nations Publication, UNCTAD/DTL/STICT/2012/5.
- Underhill Corporate Solutions, (2011): *Literature Review on Small and Medium Enterprises' Access to Credit and Support in South Africa*, s.l.: National Credit Regulator.
- UNDP, (1991): [Online] Available at: <http://www.gdrc.org/uem/capacity-defined.html> [Accessed 5 April 2014].
- UNESCO, (2006): Capacity Building . In: *Guide Book for Planning Education in Emergencies and Reconstruction*. Paris: International Institute for Educational Planning, pp. 1-10.
- van Egmond, E. & Erkelens, P., (2007): Technology and Knowledge Transfer for Capability Building in the Ghanaian Construction Industry. *CIB World Building Congress*, pp. 13931405.
- van Rijn, J., (2005): Procurement in the Construction Industry. *Indevelopment*, pp. 1-31.
- VRA, (2012): *Local Content Policy Document*, Ghana: Volta River Authority .
- Watermeyer, B. R., (2004): Facilitating Sustainable Development through Public and Donor Regimes: Tools and Techniques. *Public Procurement Law Review*, Issue 1, pp. 30-55.
- Watermeyer, R. B., (2012): *Changing the Construction Procurement Culture to Improve Project Outcomes: Keynote Address*. Cpae Town, Joint CIB W070, W092 and TG72 International

Conference on Facility Management, Procurement Systems and Public Partnerships [23-25 January].

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## APPENDIX 1: LETTER FOR THE STUDY

## **LETTER TO MAJOR STAKEHOLDERS**

Dear Sir,

### **REQUEST TO BOOK APPOINTMENT TO CONDUCT INTERVIEW ON CAPACITY BUILDING OF SME BUILDING CONTRACTORS IN GHANA THROUGH PUBLIC PROCUREMENT**

My name is Isaac Offei, an MPhil student at the Department of Building Technology, Kwame Nkrumah University of Science and Technology, Kumasi. I would like to book an appointment with you to conduct an interview on the above research topic. This interview is part of an MPhil study that seeks to empirically ascertain the role of public procurement policies and strategies in the capacity building of SME building contractors in Ghana. Your responses are relevant for the study in that they will enable us to obtain an understanding of the issues pertaining to the research work.

I will like to obtain the views of major stakeholders on the subject, based on their experience and high profile works undertaken in relations to public procurement of construction works. The findings from this interview will aid in the development of a framework for capacity building of SME building contractors in Ghana through public procurement.

I acknowledge that the interview is going to take some of your valuable time, however, I urge you to try and participate, as your contribution is very important towards the success of this research. **I assure you that all answers provided will be treated with the strictest confidentiality.** I would like to take this opportunity to thank you in advance for your cooperation. Yours faithfully,

.....

Isaac Offei  
**MPhil. Student**  
Mobile: 0240515798  
E-mail:ioffeiresearch@gmail.com

**Project Supervisor:**

Prof. E. Badu

Department of Building Technology,  
Kumasi.

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## **APPENDIX 2: QUESTIONNAIRES FOR THE STUDY**

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**COLLEGE OF ARCHITECTURE AND PLANNING DEPARTMENT**  
**OF BUILDING TECHNOLOGY**

**INTERVIEW QUESTIONS FOR MAJOR STAKEHOLDERS OF PUBLIC PROCUREMENT**  
**OF CONSTRUCTION WORKS IN GHANA**

**RESEARCH TOPIC:** Development of a Framework for Capacity Building of SME building Contractors through Public Procurement in Ghana.

**AIM**

The aim of this interview is to ask you about public procurement and its potential for building capacity of the SME building contractors in Ghana. An approximate breakdown of the interview is shown below.

The interview should take approximately 30 minutes. All responses will remain confidential. Any information indicating your identity will be removed and will not be linked to your responses.

If you have any queries at all, please contact me at 0240515798 or by email [offeconltd@gmail.com](mailto:offeconltd@gmail.com).

**AGENDA**

We would like to discuss following topics during the interview:

- A. Background Information
- B. Capacity Building of SME building contractors.
- C. Public procurement policies and strategies that can help build the capacity of SME building contractors.

**Section A: Background Information**

The aim of this section is to identify the respondent's background information.

- 1) How many years have you been working as a Procurement Manager, Quantity Surveyor, or Project Manager?

.....

- 2) Which professional association do you belong to?

.....

- 3) Please what is your Professional Qualification?

.....

**Section B: Capacity Building of SME building contractors in Ghana.**

The aim of this section is to elicit your views on capacity building of SME building contractors in Ghana.

- 1) How do you understand capacity building?

.....

.....

- 2) How do you assess the capacity of SME building construction firms in Ghana?

.....

.....

- 3) In your view which areas do SME building contractors in Ghana lack capacity?  
.....  
.....

- 4) Based on your experience, what are some of the factors that affect the capacity of the SME building contractors?  
.....  
.....  
.....

**Section C: Public procurement policies and strategies that can help build the capacity of SME building contractors in Ghana.**

The aim of this section is to elicit your views on public procurement policies and strategies that can help build the capacity of SME building contractors in Ghana.

- 1) Please in your view, can public procurement policies and strategies be used to help build the capacity of SME building contractors?  
.....  
.....

- 2) Does the public procurement practice in Ghana have policies or strategies that can help build the capacity of local building contractors, particularly those in the SME category?  
.....  
.....

- 3) Please what are these policies and strategies?  
.....

.....

.....

4) What policies and strategies do you suggest for incorporation into the Ghanaian public procurement for capacity building of SME building contractors?

.....

.....

.....

.....



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**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI  
COLLEGE OF ARCHITECTURE AND PLANNING DEPARTMENT OF BUILDING  
TECHNOLOGY**

**(MPhil. Procurement Management)**



**RESEARCH TOPIC:**

**DEVELOPMENT OF A FRAMEWORK FOR CAPACITY BUILDING OF SME  
BUILDING CONTRACTORS IN GHANA THROUGH PUBLIC PROCUREMENT**

**BY**

**ISAAC OFFEI (BSc.)**

**SUPERVISOR:**

**PROF. EDWARD BADU**

## Preamble

I am Isaac Offei, an MPhil student at the Department of Building Technology, Kwame Nkrumah University of Science and Technology, Kumasi. This research questionnaire has been designed to obtain the views of respondents based on their experience and high profile work undertaken in relation to public procurement of construction works. It aims at achieving the following objectives:

- To identify significant factors that affect the capacity of SME building contractors in Ghana;
- To identify public procurement policies and strategies that build the capacity of SME building contractors in Ghana and;
- To relate the identified public procurement policies and strategies to the factors that affect the capacity of SME building contractors.

The findings of this questionnaire will be used as one of the main data sets for my thesis at the Kwame Nkrumah University of Science and Technology. **Kindly respond to the questions by ticking (✓) the appropriate box for each item.**

Thank you in advance for your help in conducting this research and I look forward to receiving the completed questionnaire.

If you have any questions and contributions about this research, please mail at [offeconltd@gmail.com](mailto:offeconltd@gmail.com) or call on 0240515798.

Isaac Offei

The following is a list of defined terms for better understanding while answering the questions that follow:

**Framework contract agreements:** Framework agreement is an agreement between an employer and one or more contractors, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged.

**Unbundling public contracts:** Dividing larger public contracts into smaller lots

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## SECTION A

### Background Information

1. Please indicate the kind of organisation you work with:

- Public client organisation ☐
- Consultancy firm ☐
- D2/K2 Construction firm ☐
- D3/K3 Construction firm ☐
- D4/K4 Construction firm ☐

2. Please indicate your Profession/Occupation

- Quantity surveyor ☐
- Project manager ☐
- Procurement manager ☐
- Others (please specify)..... ☐

3. Please indicate your status in your organization:

- Director/principal partner ☐
- Associate partner ☐
- Senior officer ☐
- Others (please specify) ..... ☐

4. For how long have you been involved in public procurement of construction works?

Less than 5 years

☐

5-10 years

☐

Over 10 years

☐

## SECTION B

In your experiences, which of the following factors affect the Capacity of SME Building Contractors in Ghana? Please indicate the level of significance of each factor by ticking the corresponding box.

**1= Least, 2 = Lower, 3 = High, 4 = Higher, 5 = Highest**

FACTORS	RANKING				
	1	2	3	4	5
1. Poor project preparation					
2. Poor estimation practices					
3. Poor communication structures					
4. Poor monitoring and control					
5. Lack of material control systems					
6. Delay in payments for work done					
7. Change in government policies					
8. Limited access to credit					
9. High cost of construction inputs					
10. Lack of training opportunities					
11. Lack of fair competition					
12. Non-payment of interest on delayed payments					
13. High tendering costs					
14. High and unstable inflation					
15. Inadequate access to public contracts					
16. Unreliable material supply base					
17. Lack of technical skills					
18. Lack of contractual and managerial skills					
19. Long laid down procurement procedures					
20. Complicated contract conditions					
21. Lack of financial management skills					

22. Lack of entrepreneurial skills					
23. Inadequate supportive institutional arrangements					
24. Structure of the companies					
25. Non-business-like lifestyle of contractors					
26. Weak enforcement of contract rules and regulations					
27. Low returns on operations					
<i>If other, please specify</i>					
28.					
29.					
30.					
31.					

### SECTION C

Kindly rank according to the level of importance of the following procurement policies and strategies for **Capacity Building** of SME building contractors in Ghana.

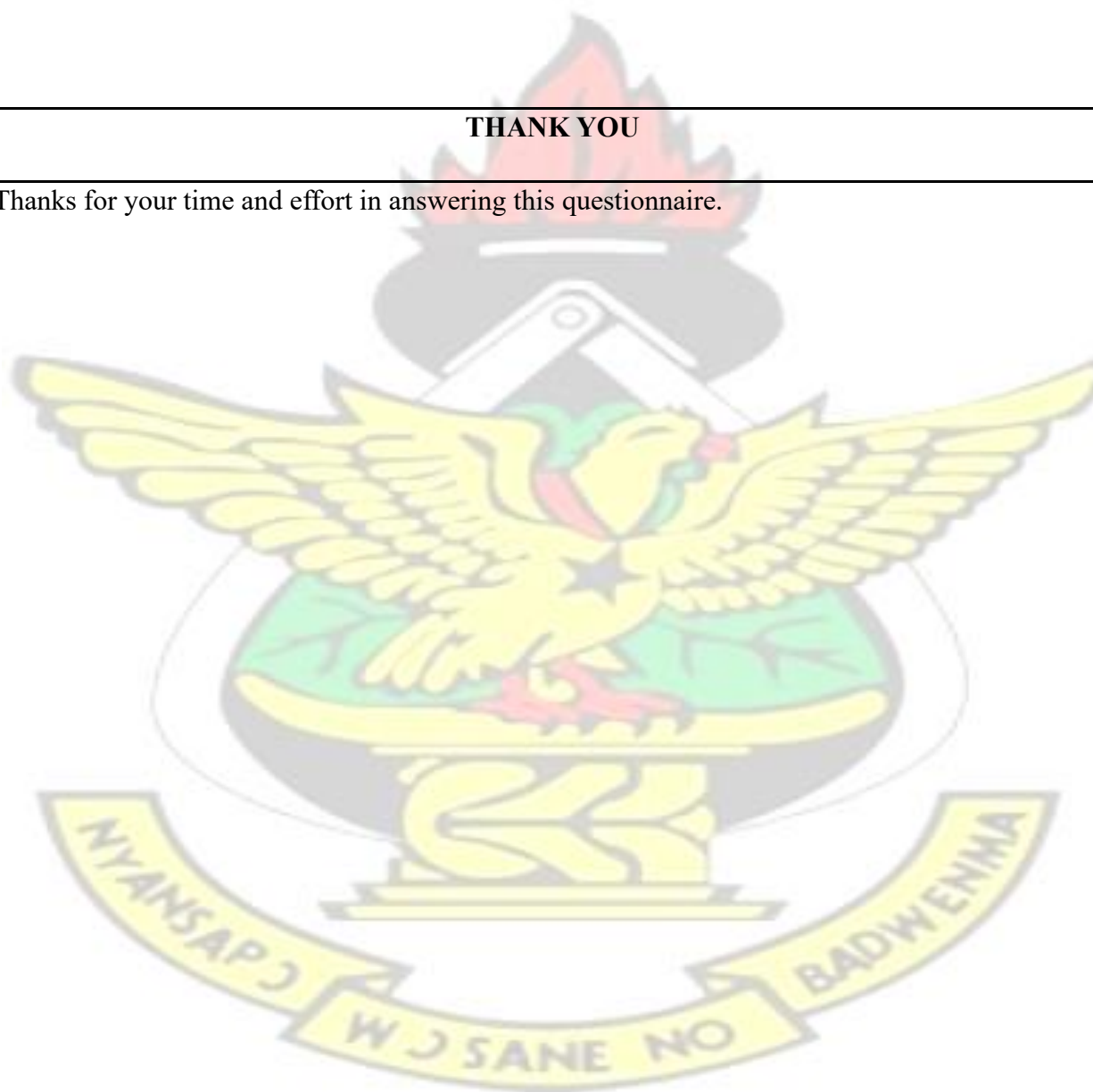
**1= not important, 2 = less important 3 = moderately important, 4 = important, 5 = most important**

PROCUREMENT POLICIES AND STRATEGIES	RANKING				
	1	2	3	4	5
1. Unbundling public contracts into smaller lots					
2. Uniformity in tender and contract documentation					
3. Setting targets for the proportion of contracts awarded					
4. Setting proportionate requirements for contracts					
5. Encouraging collaborations among various stakeholders					
6. Improving access to procurement information					
7. Providing contract reservations for SME contractors					
8. Waving the requirement for submission of performance bond or guarantee for work up to a given threshold					
9. Providing exclusive preference for SME building contractors					
10. Applying margin of preference for SME building contractors					
11. Subcontracting arrangements for SME building contractors					
12. Joint venture arrangements for SME building contractors					
13. Sole sourcing arrangements with local contractors					
14. Streamlining procurement procedures to make them more transparent and standard					
15. Providing general local content criteria in evaluation of tenders					

16. Provision of framework agreements in the works procurement					
17. Strict adherence to payment schedules of contracts					
<i>If other, please specify</i>					
18.					
19.					
20.					
21.					

**THANK YOU**

Thanks for your time and effort in answering this questionnaire.



**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**DEPARTMENT OF BUILDING TECHNOLOGY**

**FRAMEWORK VALIDATION INTERVIEW SCHEDULE:**

Framework for Capacity Building of SME Building Contractors in Ghana through Public Procurement

**AIM**

The aim of this interview is to refine and examine the appropriateness of the proposed Framework for Capacity Building of SME Building Contractors in Ghana through Public Procurement (please see Diagram B) in terms of issues such as clarity, information flow and improvement measures, and to discuss the framework implementation strategy.

The interview would take approximately 45 minutes and the information obtained from respondents will be used to refine the proposed framework. **All responses will remain confidential. Any information indicating your identity will be removed and will not be linked to your responses.**

Thank you in advance for your help in conducting this research.

Isaac Offei, MPhil Student, Department of Building Technology, Kwame Nkrumah University of Science and Technology, Kumasi

Email: [ioffeiresearch@gmail.com](mailto:ioffeiresearch@gmail.com); Mobile: 0240515798

Supervisor: Professor E. Badu,

Provost, College of Architecture, and Planning,

Kwame Nkrumah University of Science and Technology,

Kumasi.

**Section A: Background Information**

A.1. How many years have you been working as a Procurement Manager, Project Manager or Quantity Surveyor?

.....

A. 2.Which professional association do you belong to?

.....

A.3. Please what is your Professional Qualification?

.....

**Section B: Clarity and Information Flow of the Framework Please**

comment on the following:

B.1. Clarity of the framework structure

B.2. Information flow and appropriateness of the four cluster of factors affecting the capacity of SMEBCs (A, B, C, and D).

B.3. Appropriateness and practicality of the identified public procurement policies and strategies under (1, 2, 3, and 4).

**Section C: Implementation Strategy**

How can the proposed framework be implemented in the Ghanaian Public Procurement System?

For example,

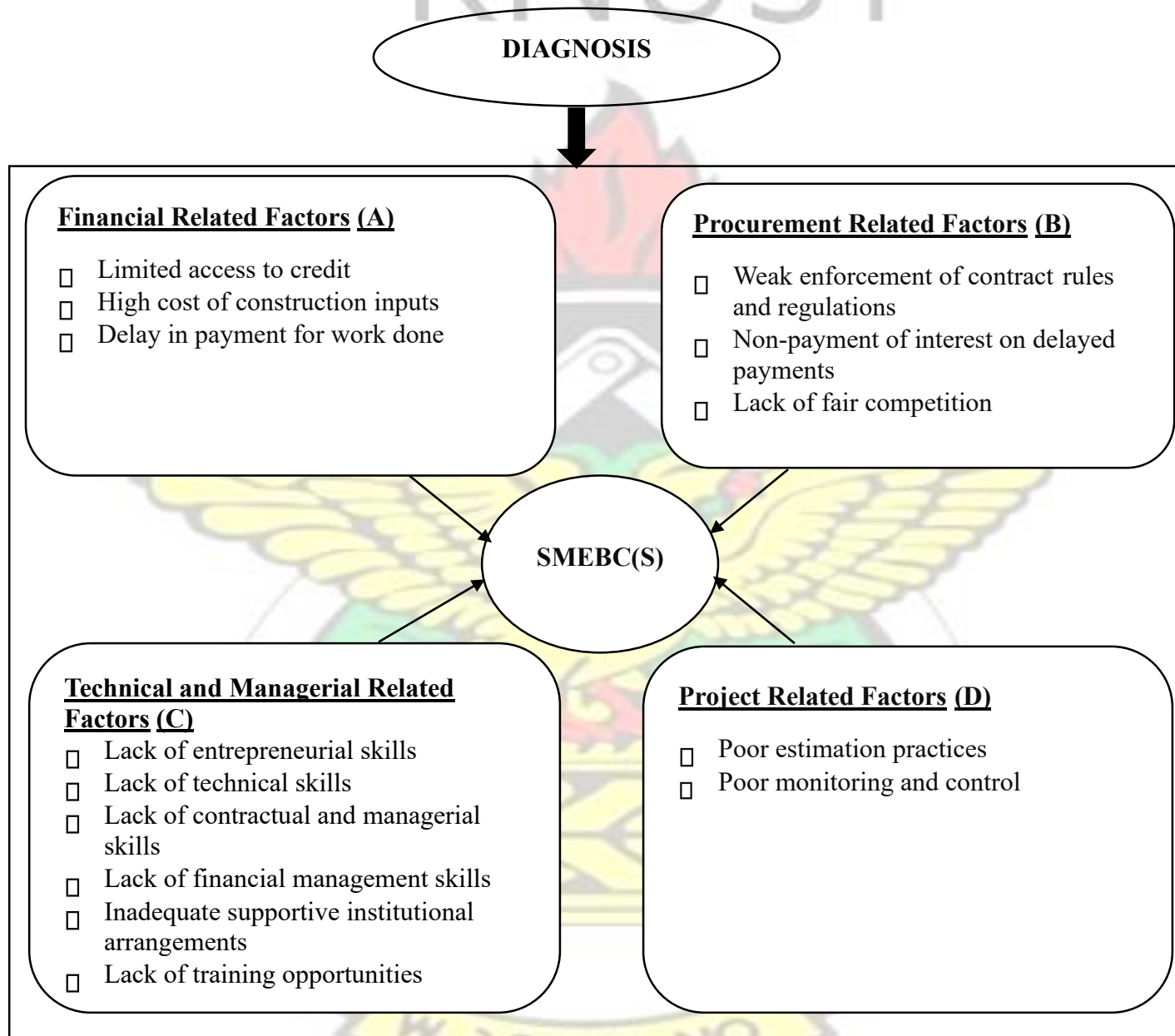
C.1. Strategy for implementation appropriate/relevant methods,

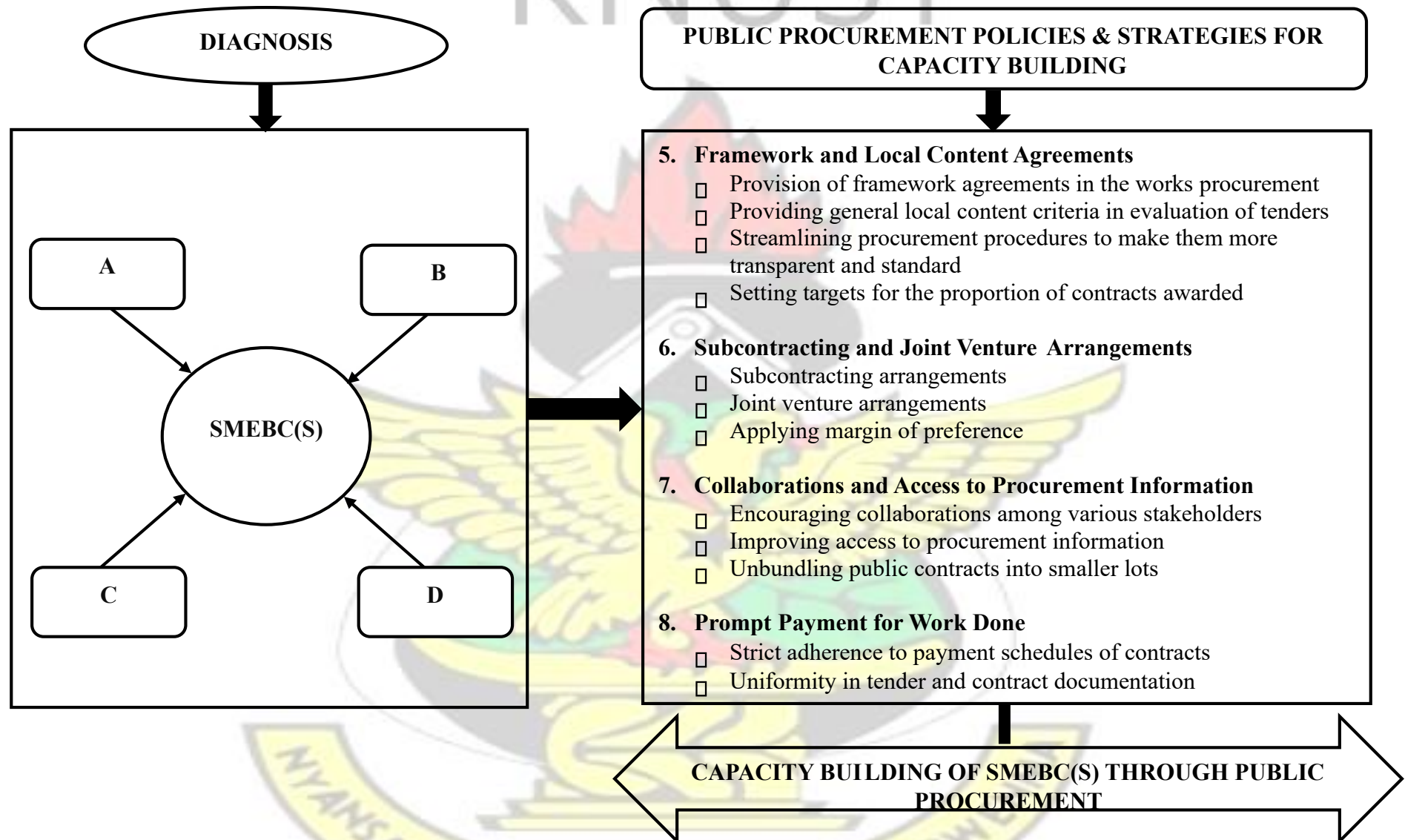
C.2. Tools and standards,

C.3. To what level/degree should it be integrated?

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Proposed Framework for Capacity Building of SME Building Contractors in Ghana  
(B)

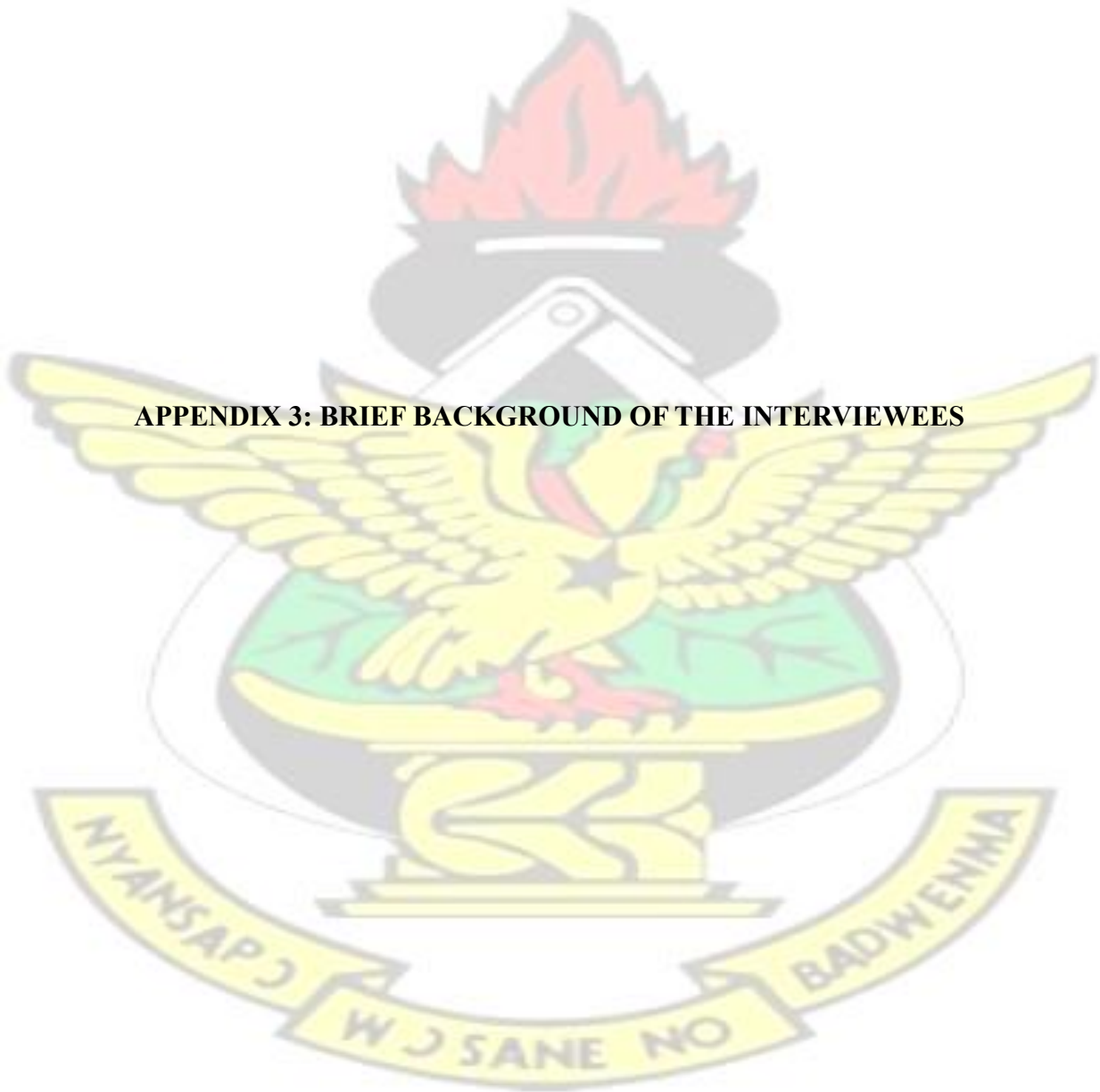
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## APPENDIX 3: BRIEF BACKGROUND OF THE INTERVIEWEES



### **PUBLIC PROCUREMENT AUTHORITY (PPA)**

The PPA is established by an Act of Parliament in 2003 (Act 663) to harmonise the processes of public procurement in the public service to secure a judicious, economic and efficient use of state resources in public procurement and ensure that public procurement is carried out in a fair, transparent and non-discriminatory manner.

### **MINISTRY OF WATER RESOURCES, WORKS, AND HOUSING**

The Ministry of Water Resources, Works and Housing is responsible for the formulation and coordination of policies and programmes for the systematic development of the country's infrastructure requirements in respect of Works, Housing, Water Supply and Sanitation and Hydrology. The Ministry co-ordinates and supervises, by way of monitoring and evaluation of the performance of both public and private agencies responding to and participating in the realisation of the policy objectives established for the sector. The Ministry is made up of four directorates: Policy Planning Budgeting Monitoring and Evaluation (PPBME); Human Resource Development Unit (HRDU); Research Statistics Information Management (RSIM); and Administration and Finance.

### **GHANA EDUCATION TRUST FUND (GETFUND)**

The GETFund was established by an Act of Parliament in 2000 (Act 581) and began operations in the second half of 2001 with the object of providing finance to supplement the provision of Education at all levels by Government. Currently, provides finance for building of facilities for schools including primary, secondary, and tertiary levels.

### **ASSOCIATION OF BUILDING AND CIVIL ENGINEERING CONTRACTORS OF GHANA (ABCECG)**

The ABCECG is the biggest association which Building and Civil Engineering Contractors in Ghana belong. It was established over thirty years (30) ago with ten (10) regional branches manned by the Regional Chairmen and their executives, while the National Secretariat is manned by the President of the association and the steering committee.

### **ARCHITECTURAL AND ENGINEERING SERVICES CORPORATION**

Architectural & Engineering Services Limited (AESL) is a practicing professional group of Consulting Civil, Structural, Electrical and Mechanical Engineers, Architects, Land and Quantity Surveyors. AESL has been the main consultant for most government projects in Ghana.

### **MESSRS AMOAH-MENSAH**

Mr Amoah- Mensah is a fellow and former president of Ghana Institution of Surveyors, and former executive director of Building and Road Research Institute (BRRI). He is also a former lecturer at the Department of Building Technology, KNUST. The following are some of his publications:

- Amoa- Mensah, K. (1999): Attaining affordability through cost saving house building techniques: a case study of strategies that aided resource optimization in some affordable housing projects in Ghana, The Surveyor, Ghana Institution of Surveyors, pp. 109- 122.
- Amoa- Mensah, K. (2002): The strategy of fast track housing delivery: the Ashongman success story, Paper presented at the Building and Road Research Institute, Research Week Seminar, November, pp 1-7
- Amoa –Mensah, K. (2003): Housing in Ghana: a search for sustainable options as the way forward for enhanced output – year 2003 and beyond, a paper presented at the International Building Exhibition Seminar. Accra, 27th –29th August

### **MESSRS ABB CONSULT**

Mr Ekow Budu-Anguah is an established quantity surveyor with over thirty (30) years of professional experiences. He is a Fellow of Ghana Institution of Surveyors (FGHIS) and former chairman of the Quantity Surveying Division of the GHIS. He is currently the Principal Consultant of ABB Consult, Quantity Surveying firm in private practice.

### **SEKONDI-TAKORADI METROPOLITAN ASSEMBLY (STMA)**

Secondi Takoradi Metropolitan forms part of twenty two (22) Metropolitan, Municipalities and Districts in the Western Region of Ghana. The Administrative Capital of the Metropolitan is Sekondi. This makes it the smallest, but easily the most highly developed. Indeed, it is the third largest metropolis in the whole of Ghana. It is located on the coast, about 200km west of Accra.

The Metropolitan shares boundaries with Shama District to the east, to the north with Mpohor District, to the west with Ahanta West District and to the south with Gulf of Guinea.

### **BUILDING AND ROAD RESEARCH INSTITUTE (BRRI)**

The BRRI is one of the thirteen (13) research institutes of the Council for Scientific and Industrial Research (CSIR), Ghana. The BRRI was established in 1952 as the West African Building Research Institute in Accra. Its mission is to promote the conduct of demand-driven and problem based research, provide training and technology transfer that links effectively to the socio-economic development of the country particularly the building, road and transport industry. The Institute has scientists and technologists with a wealth of experience and skills with regards to the construction industry.

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