

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI,
GHANA**

**Relevance of Procurement Securities in the Procurement of Works in the Ghanaian
Construction Industry: A Case Study of the Road Sector**

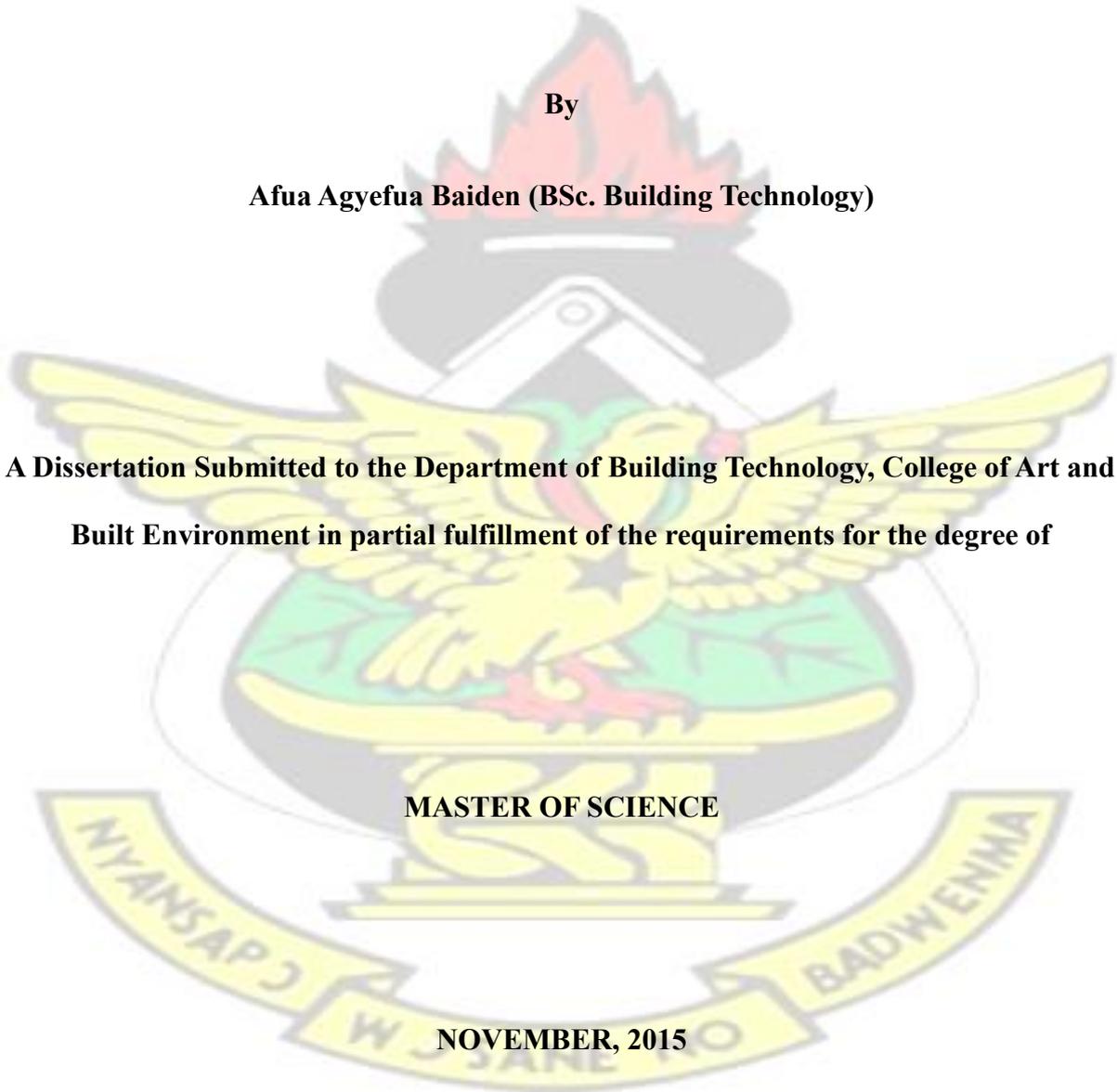
By

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**A Dissertation Submitted to the Department of Building Technology, College of Art and
Built Environment in partial fulfillment of the requirements for the degree of**

MASTER OF SCIENCE

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Declaration

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

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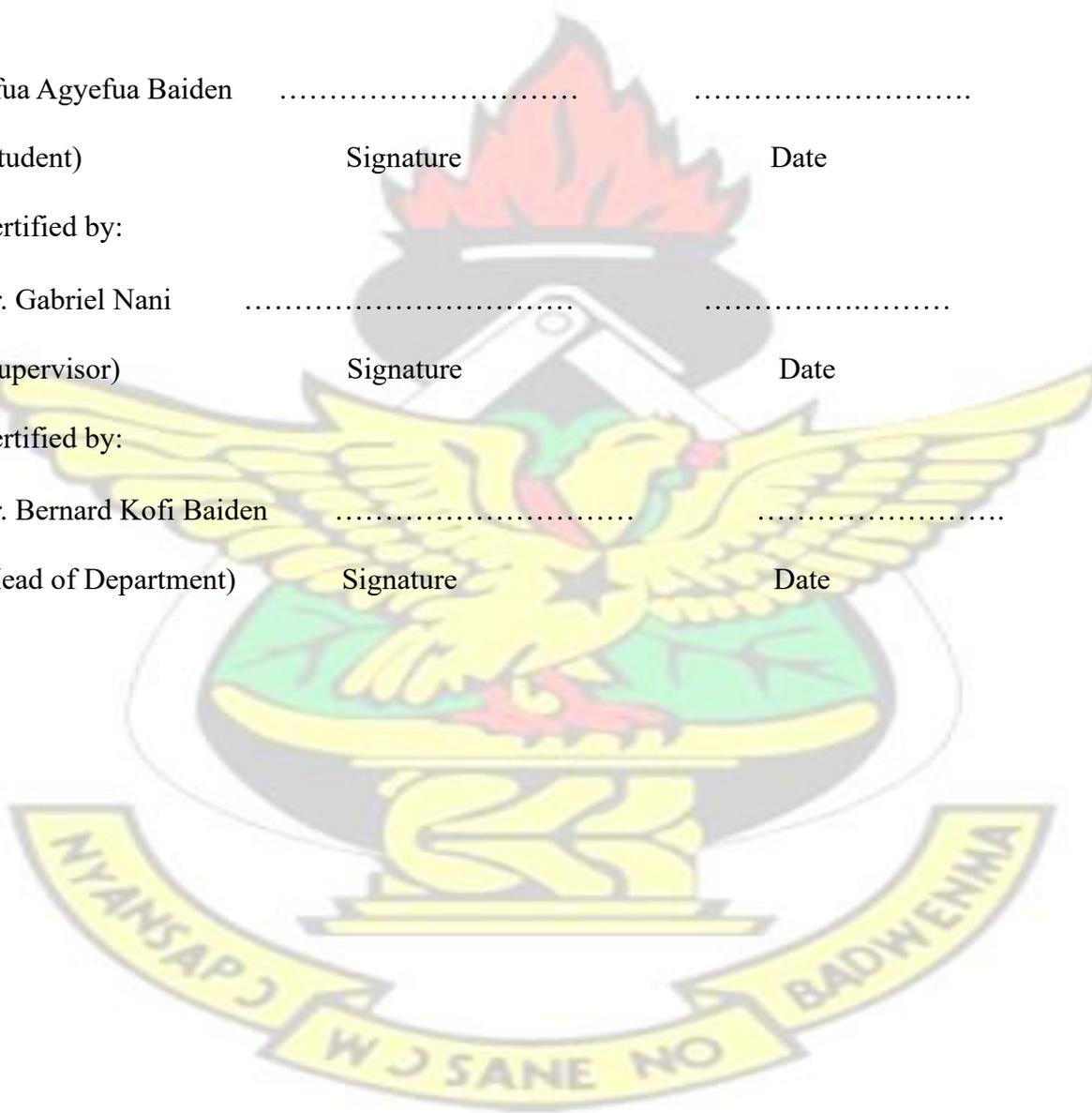
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Abstract

Procurement securities at any stage of the procurement cycle is given to the buyer by the seller as an assurance that the cycle would be completed and the purpose for that procurement exercise would be achieved. Guarantees securing can be very costly for the contractors depending on the institution's risk rating of the contractor. The aim of the study is to assess the relevance of procurement securities in the procurement of works within the road construction sector of Ghana. Identifying the various types and effects of procurement securities, with challenges and relevance of procurement securities were the objectives taken under consideration. The main tool used in the data collection was questionnaires with the target population for the collection of data being professionals in the road sector engaged in accessing tender securities. Statistical package for social scientists (SPSS V 20), mean score ranking was employed to analyze data obtained. Bid, Performance, Advance Payment and Retention Guarantees are the main procurement securities accessed in the road sector. The findings revealed that transfer of performance and financial risk to the surety; provide an assurance of performance; guarantee against default at the end of the defect liability period and provide protection in the event that the contractor is unable or unwilling to perform were the main effect of procurement securities on the procurement process. On the challenges associated with procurement securities; organization and financial capability, prolong time required in investigating the defaults, narrow perspective of the surety response was identified as the main ones. Finally, the study identified the following relevance of tender guarantee; ensures bid is submitted in good faith, performance guarantee ensures that works will be executed per specifications, advance payment guarantee assures contract employer of proper utilization of funds for mobilization and retention securities protect clients against default at the end of the defects liability. It is recommended that the financial or surety institutions should make the accessing of these procurement guarantees less expensive and frustrating for contractors. The

collateral demands should be reconsidered to allow contractors to access these guarantee. Contractors should also work towards building their financial capacity at all levels in order to improve their risk rating from time to time.

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Dedication

I dedicate this work to my dearest uncles, Mr. Kwasi Tsibo-Takyi (Dada Kwasi) and Mr. Kweku Odame-Takyi (Dada Dame), for their immeasurable contributions toward my education.



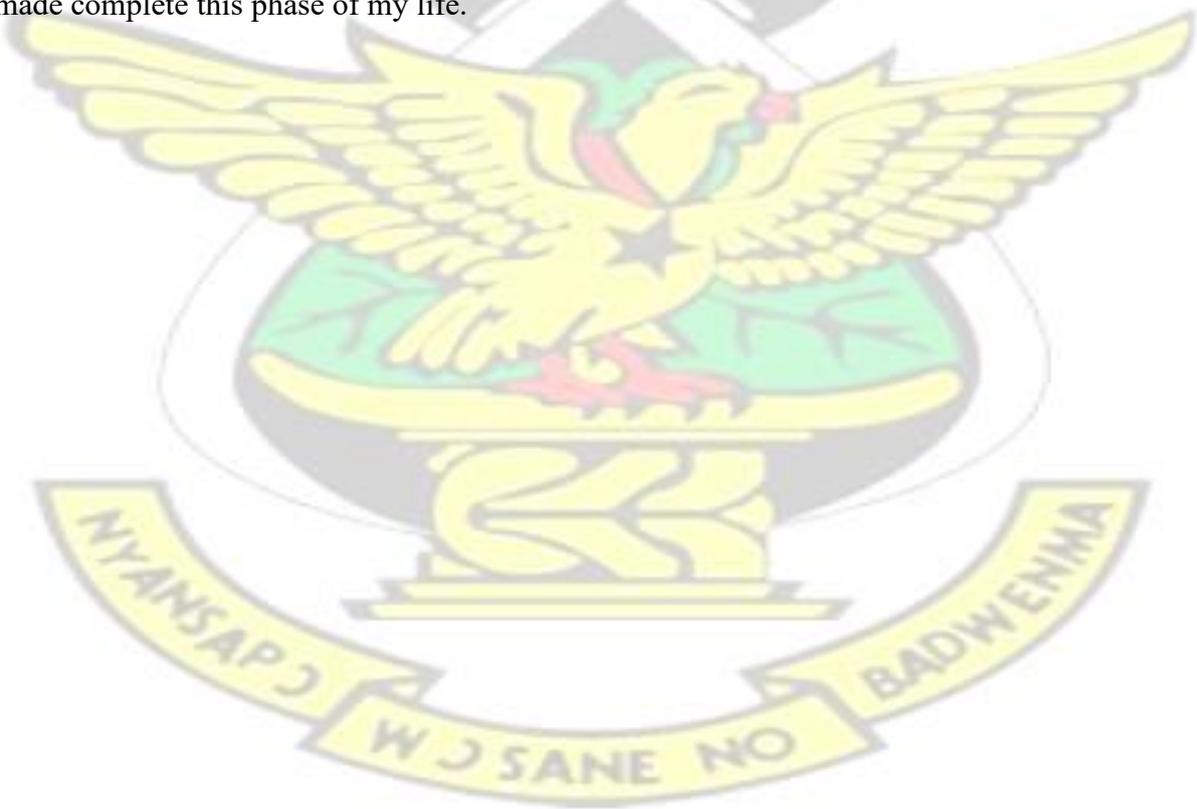
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CHAPTER ONE: INTRODUCTION

1.1 Background of the study

All nations and organizations need inputs of good, works and services from external suppliers or providers. Procurement represents a very large fraction of total economic activity. It is believed that procurement represent a huge part of the Gross Domestic Product, GDP of developing and developed economies occupies a considerable portion of private and public sector employment. Procurement as defined is the function of purchasing services, works and goods, from an external body (United Nations Commission on International Trade Law (UNCITRAL), Model law on Procurement of Goods (Arrowsmith, 1995; Acquaye, 2011).

Public Procurement is defined as the acquisition of public bodies, namely government departments and municipalities of various goods, works and services that they need for their activities by making a contract with another entity (Acquaye, 2011), be it public or private. Securities which usually come in the form of guarantees and bonds are mostly required for these transactions or procurement as risk mitigation mechanism against non-performance or non-payment (Adam, 2012). The mostly used procurement securities are tender/bid security, performance security, advance payment security and retention security (*ibid*).

Tender security is a sum of money that can be calculated as a percentage of the estimated budget of a proposed purchase or a percentage of the price of an offer (Datar *et al.*, 2013). It is used by the customer as protection against the bidders withdrew their offer has expired before the end of its validity, or because he refused to sign the contract (Craswell, 1996). The tender guarantee is to discourage bidders them to withdraw their

offers because they would otherwise lose the amount of the tender guarantee for the customer (Haddock *et al.*, 1987). It gives the customer a certain security that the successful bidder will sign the contract or otherwise lose their money. A bid security may require companies to submit bids in response to an invitation to tender when procuring goods, works and services that are not consulting (Hughes, 2006). It is commonly used. Although it is unusual for consultants, it could apply if stipulated in the tender documents and in the public procurement rules. As mentioned above, the amount of the bid security can be set as a percentage of the bidder's bid or as a percentage of the budget allocated for the proposed acquisition (DeMarzo *et al.*, 2004). However, if the procurement method used does not allow revealing the allocated budget, care should be taken to establish the bid bond as a fixed amount or a percentage of the offer of the tenderers and not as a percentage of the budget. This would prevent indirectly or inadvertently reveal the budget setting the amount of the bid security as a percentage of the estimated project budget purchase.

A bid bond guarantee is generally acceptable in one of the following formats: (i) unconditional bank guarantee, (ii) the irrevocable letter of credit, (iii) a certified check, or (iv) bonds. The bid security must be delivered to the customer if the offeror: (i) withdraws its bid before the end of the period of validity of the offer, (ii) sign the contract after notification of award, or (iii) It does not provide a performance security, if necessary (O'Driscoll, 1985). Performance securities are designed to ensure that goods, works and services are delivered in accordance with the terms of the contract and the agreed time. Warranty securities generally secure the buyer's contractual warranty claims.

Advance Payment securities have a basic purpose of ensuring that an advance payment is used by the supplier/contractor in accordance with the intentions of the contract between the supplier and the buyer (Korley, 2014). It also provides the supplier with funds to purchase the necessary materials and components, bring machinery to the construction site, hire labor or make other preparations for the contract.

1.2 Statement of the study

Working with a guarantee issuing company for some couple of years has brought my attention to the various types of guarantees which are issued to all customers but particularly for those in the road construction sector (Beato, 1997). Guarantees such as Tender Guarantee, Advance Payment Guarantee, Performance Guarantee and the Retention Guarantee are the types mostly patronized by the contractors of the road construction sector (Sibiya, 2015). The tender securities always run their validity period and sometimes their extension periods without being called on. This means that the contractors or suppliers do not pull out of tendering process until completed and contract awarded.

Guarantees securing can be very costly for the contractors depending on the institution's risk rating of the contractor. The collateral requirements can range from all assets debenture to about one hundred and thirty percentages (130%) cover. Clean lending and negative pledges are for multinational companies and risk rating one construction firms with very strong balance sheets. The collateral covers are most of time cash or landed properties and those using cash cover means leaving a firm's funds for an average period of ninety days without yielding any income. Since most contractors in the road sector do not pull out of a tender process until completed and the contract award the best lowest evaluated tenderer

Procurement securities at any stage of the procurement cycle is give the buyer by the seller as an assurance that the cycle would be completed and the purpose for that procurement exercise would be achieved. This study therefore focuses on highlighting the relevance of tender securities in the Ghanaian industry. A case study of the road sector, since contractors or tenderer seems not opt out of the process until is completed and award given hence the need for this study.

1.3 Research questions

The following research questions are formulated:

- a) What is knowledge level of procurement securities and their relevance by public procurement practitioners in the road sector of Ghana?
- b) What are the types of procurement securities associated with the various stages of the procurement process in the road sector?
- c) What are the types of procurement securities required or demanded by the road construction sector agencies?
- d) How effective are these tender securities as a risk mitigation tool?
- e) What are the best practices of tender securities applicable to Ghana?

1.4 Aim and objectives

1.4.1 Aim

The aim of the study is to assess the relevance of procurement securities in the procurement of works within the road construction sector of Ghana.

1.4.2 Objectives

Specific objectives set for the study are:

- a) To identify the various types of procurement securities;

- b) To determine the effect of identified procurement Securities on the procurement process; and
- c) To identify the challenges associated with the use of the identified procurement securities and their relative relevance to their objectives in the procurement of works.

1.5 Significance of study

Firstly, the findings of the study highlighted the various tender securities associated with public procurement in Ghana. Secondly, the study also assessed the relevance of these tender securities in the procurement of works in the road sector. Thirdly, in conjunction with other studies, the study provided direction for development of other forms of tender securities apart from what we currently have in the system for road sector procurement. Finally, the study serves as a basis for further research to other researchers in the field of procurement securities in Ghana.

1.6 Research methodology

To achieve the aim, objectives and research questions posed by this study, there is the need to adopt an appropriate research philosophy (paradigms), research strategy, research design and analytic techniques that will make the results rigorous and acceptable.

Quantitative research is "objective" in nature. This research falls in the quantitative research approach. The quantitative research approach was used in this thesis because of these well-known advantages such as, formal, descriptive, exploratory, and correlated.

Data gathering is crucial in research, as the data contributes to a better understanding of a theoretical background (Bernard, 2002). Data collection will be done through both secondary and primary sources. The primary data (field survey) will deal with the collection of the empirical data through survey questionnaires. The secondary data (literature review) will be extracted from documented facts using plain sheets and other relevant materials. According to Bernard (1998), data analysis consists of systematically looking for patterns in recorded observations and formulating ideas that account for those patterns. The data generated from the field survey will be analyzed using the Statistical Package for Social Science (SPSS) and Microsoft Excel.

1.7 Scope of the study

The study is geographically confined to some selected agencies and departments of the transport ministry in charge of road development procurement, Insurance companies and Banks in the Greater Accra Region of Ghana. The study is conceptually focused on establishing the various categories of procurement securities (tender security) and their relevance on the procurement processes within these agencies.

1.8 Limitations of the study

The researchers had a number of limitations, including the inability of some respondents to correctly complete the required questionnaire, the insufficiency of the research instrument to gather all the necessary information, and the failure of some respondents to finish the questionnaire and the inherent weakness of the study design. Also, the study is limited in that it only focuses on the selected banks, insurance companies, contractors, national road sector agencies and departments in the National Capital of Ghana. The findings in this study might not be an adequate representation of transport agencies in Ghana; hence the results cannot be generalized to all.

1.9 Structure of the study

The research was made up of five major chapters; with chapter one comprising of the background to the study, statement of problem, objectives of the study, hypothesis/study questions, scope and limitations of research and the significance of study. The second chapter was also devoted to literature review with a look at conceptual to theoretical aspect of Tender Securities and the relevance in the procurement process based on contributions from various authors.

Furthermore, the research methodology formed chapter three, in which the research design, population, sample size and technique, data gathering procedure and analysis was examined. Chapter four looked at the analysis of the various data gathered which was based on the responses from the respondents. The data was captured in tables and pie chart for simple analysis and interpretations. Finally, summary of major findings, recommendations and conclusions came under chapter five.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter predominantly looks into the works done on the relevance of tender securities in the construction industry. The assessment emphasizes on the outline of the various types of tender securities in the construction industry. Also a number of relevant literatures on the challenges and relevance of the various tender securities to the construction industry were reviewed in this chapter.

2.2 Overview of the Ghanaian Construction Industry

The construction sector of Ghana has been in the process of transformation. This transformation is based on improving the competitiveness of the construction industry

and enhancing its ability to fulfill the national development demands. It has made an important impact both in industrial production and the GDP (Gross Domestic Product) in the country of late. Referring to the statistics existing in Ghana, there is a higher impact on the built environment (Osei, 2013). Hildebrandt, (2000) therefore concurred that the construction industry is regarded as one of the chief sector of the economies of all countries and Ghana is a part due to the fact that it contributes immensely to the socioeconomic development of the country.

There are many reasons for the importance of the industry. The actions of the sector are very significant for the attainment of national development goals of bringing forth infrastructures such as roads, highways, agricultural and irrigation systems, railways, power systems, airports, telecommunication systems, ports, schools, hospitals, municipalities, offices, houses and other buildings; urban infrastructure etc. (Osei, 2013). Quality design and construction of these facilities has an impact on the efficiency with which productive activities and the provision of services can be achieved and can also affect the ability of the nation to attract foreign investment. According to the Ghana Statistical Service, GSS (2014), the contribution of the construction industry to gross domestic product (GDP) increased from 8.8% in 2009 to 11.8% in 2013. This is a much economy.

The quick expansion of the infrastructure undertaken by the private sector and the government has augured most construction activities and stimulated the demand in many key sectors, like paint, steel, cement, and chemical products, glass, wood, machinery and earth-moving equipment. The sector of the construction is an essential

industry has both the strong and downstream connections. Besides, the industry of the construction produces substantial job and supplies an impulse for growth in other sectors. For example, the construction makes use of material and component which are manufactured by the manufacturing industry. These entries are supplied by the sector of commerce and services. Also construction is somehow centered on financial, as well as legal services, of accounting and other relevant aspects of the sector of professional services. It must be noticed also that, once in a while, the enterprises in all the sectors applies for any construction services. So, the bond is bidirectional; construction influences other sectors, and vice-versa (Ofori, 2012).

Every party connected to the industry of the construction faces the risk of a form to another one; some risks are special for a party and someone shared with other parties. According for Ghana Statistical Service, GSS (2014), the contribution of the industry of the construction for the gross national product (GNP) raised of 8.8 % in 2009 for 11,8 % in 2013. This constitutes a great part of the economy. Due to his big size, the industry of the construction has the potential to contribute straightly to the growth of the national economy. At the same time, a period of low production of the construction can affect negatively the growth of the economy. The quick expansion of the infrastructure so much as the government as the private sector has that it unleashed activities of construction and it stimulated the demand in many key sectors, like paint, steel, cement, and chemical products, glass, wood, machinery and earthmoving equipment. The sector of the construction is a basic industry having strong connections of growth.

2.2.1 The capacity of the industry of Ghanaian construction

It is very clear that the private construction and consulting firms in Ghana are very young and the need for capacity building for these firms is very crucial. It is my opinion that the local firms can make substantial contributions for the infrastructure development in the country, by means of the realization of works that are being carried out by the foreign enterprises and ineffectively carried out by government entities, increasing their level of maturity and efficiency as business enterprises. The role of the financial institutions in this respect is very crucial. Conditions necessary for the creation and development of strong enterprises of construction and consultancy are common to all the countries. These conditions comprise:

- Availability of a rationally constant flow of work of the project of both the private and government sector clients;
- Fair and transparent (and result oriented) selection processes;
- Financial resources to allow construction and consulting firms to become established with private financing and with a strong role for employee ownership, together with a project profitability, tax and regulatory regime that encourages such ownership;
- Increase of the use of modern technology by local enterprises;
- Management capacity inside the enterprises to allow that the enterprises to be managed in profitable form, strong and quite managed industrial associations, which are able to articulate the position of firms-members in the whole fan of questions that affect the financial and professional health of the industry.
- There are series of obstacles for the construction and development of the capacity of the local enterprises. The commonest are:
 - Discrimination of the local enterprises in favor of the enterprises of foreign developed countries,

- Unsuitable sources of financing for the creation of private enterprises,
- Lack of transparency in the evaluation and grant of the projects,
- Lack of joint-ventures in agreement foreign enterprises,
- Unacceptable contractual conditions
- The bureaucracy in the implementation (payment delays, etc.)
- Unethical practices as well as corruption etc. Different studies established that the general state of the domestic industry of construction in Ghana is substandard. In accordance with these studies, the main paucities are:
 - An inadequate capital base, specifically to construction contractors,
 - Obsolete and inadequate number of equipment and their substandard levels of utilization,
 - Deficits in human capitals with regard to managerial, financial, technical, and entrepreneurial skills and
 - Very limited experience and participation in private sector for road, bridge and water related construction works and provision of consulting service (Kumaraswamy *et al.*, 2004).

Due to insufficient capacity of local contracting firms, it became normal practice to offer multimillion cedi worth projects to foreign contractors. This fact indicates that some ways has to be devised to raise the capacity of competent local contractors so that they can engage themselves in major construction undertakings be it locally or at international level. For this a large contribution is expected from financial institutes mainly the Banks. The other possibility to raise their capacity is merging of two or more contracting firms or joint venture deals can be considered among the possible ways of upgrading local contracting firms' capacity.

2.3 Securities in Construction Procurement

In modern times, construction projects have become increasingly complex and intriguing. One source of complexity arises from the large number of parties involved, funding for the projects of industry and the largest energy security requires wellmanaged, profitable construction companies. Exchange building, meanwhile, insist on lending only for financially stable these contractors. The realization of a construction project is mostly calculated by the timely response to the specifications around the specified budget completion. Conversely, Radhakrishnan, (1999) concurs that in the implementation of any engineering project there is always an element of risk: that is, the construction is a high risk business, the level of risk when considered much higher than in other types of economic activities. In addition, Murdoch and Hughes, (2000) also opined that commercial projects involve risk and involve people. All parties have some risk when they enter into a construction contract. According to Robinson et al., (1996), the reception of a requirement implies acceptance of a chord risk, i.e. the risk of being unable to fulfill the obligation due to insufficient, own ineffectiveness, thoughtlessness or mistake, or due to interference from external sources or supervening events.

2.3.1 History

The guarantor is a singular or collective person who agrees in being responsible for the debt or obligation for another party. The first contract surety known data recorded on a clay tablet from Mesopotamia Originally around 2,750 BC. Code of Hammurabi, an ancient legal code created in 1760 BC, is the first known legal code to address bail. The oldest surviving written guarantee contract is a financial contract Babylon created in 670 AD and the basis for many current directors' bond emanating from Roman law dating from 150 AD (McIntyre and Strischek, 2005). More than two millennia later, in

1880, the insurance company was first founded in the US - United States Fidelity and Casualty Company of New York. An epoch later, in 1884 the Heard Act turn out to be law. The drive of the regulation was established to protect taxpayers of default by the contractor needful of federal contractors in construction projects to submit bonds to assure completion of the project and disbursement of suppliers and subcontractors (SFAA 2008; McIntyre and Strischek 2005).

2.3.2 Securities in Financial Institutions

Tender securities are usually provided by the financial market, either by a bank or an insurance company. The contractor and of the guarantor normally try to establish the terms and conditions below which the bond can be termed. The clients, for their quota requires to be made aware of the notion that the guarantor of the bond issue reliable, sound and responsible corporative entity and to be convinced that, there will be a need to call the labor union for the payment of the guarantor there is the need to answer promptly. Especially in Ghana, bonds and guarantees are provided for national construction companies (private and public) commercial banks and insurance companies. Commissions bonds and guarantees required by banks are relatively expensive than insurance companies. However, some project owners may require contractors to offer bonds and / or guarantees only banks. In general, the cost of a bond is relatively small compared to the contract price. That is going to depend, in certain measure, to the agreed terms and conditions that the client demands and the degree of risk for the guarantor attributed to the capacity of the contractor to give compensation to fight and to respond to any sum is called.

Tender securities are not always necessary and not considered judgments concerning the dangers of a particular contract and the skills and monetary means accessible to the contractors are replaced. A conclusion to necessitate security of supply should be

fragment of a comprehensive methodology to manage risk and the available measures ought to be considered in order to cut down the danger of evasion, together with adequate pre-qualification of bidders. Basically there are different types of bonds which are adopted in a construction activity. The main are:

1. Bid Bond / Bid Security.
2. Performance Bond
3. Advance Payment Guarantee / Bank Guarantee
4. Retention Money Guarantee. (Mamo, 2006).

These securities are still in use in Ghana. However, their use should have to be increased in order to relieve the cash flow problem of the domestic construction firms to some extent.

2.4 Procurement Security

An offer connection is a contract that wraps three parts in which the guarantor pledges to answer for the debt or of another standard. The main person in charge is called the principal, and when bond called the creditor is chosen whose sole responsibility is to protect the principal. In projects of public construction, they demand three types of bonds or titles: to put up for auction to guarantee the fulfillment of the security and security of the payments (Mamo, 2006; Robinson et al, 1996). The bid bond guarantees that, if the contract is awarded the director, the director will execute the contract and offers necessary guarantees of performance and payment. The execution guarantee guarantees the owner that the contract will be ended by means of the payment of the price of the contract. The bond of payment and security obliges the gestor to pay of work and material supplied with the director or to a subcontractor upscale Main Each country promulgated several regulation and legal requisites for the issuing titles that they are monitored and executed by the insurance of the state (Strischek and McIntyre, 2005).

There are basically three types of titles or bonds of guarantee used in the employment of construction; offer, the performance and payment. It is normally demanded the guarantee of the contractor of public works, whereas with the offer knots demands of private work are to criterion of an owner. The proposal guarantee guarantees that a) the offer will have been presented in good faith, b) the contractor intends to celebrate the contract in the offer price, and c) the Contractor must constitute necessary obligations of performance and payment. In the rare opportunities in connection contest is supplied by the subcontracted one. The offer guarantee normally offers an offer of security in the value of 5 % to 10 % of the proposal of a contractor. Guarantor is generally furnished by the contractor, without any cost, he wants the contractor or the project (Fisk and Reynolds, 2006). Also the terms and conditions of an offer security circumstances and to determine the mechanisms by which the bond can be called. The bank pledges itself to pay to an employer of a project even to the amount specified in a bid bond. The conditions of the obligation of guaranteeing reliability are:

1. If the Bidder will withdraws his proposal during the period of validity of the proposal specified in the document of the tender.
2. If the bidder refuses to accept the correction of the mistakes in his proposal.
For example: An error in the unit prices, arithmetical mistakes, etc.
3. If the bidder having been notified of the acceptance of his proposal by the employer during the period of validity of the proposal and,
4. He refuses to sign the agreement of contract.
5. Stop supplying the guarantee of execution (Mamo, 2006).

Bid Bond acts in like manner, the form of security to guarantee that the contractor chosen through bidding authority will celebrate a contract of construction with the owner. If the chosen contractor refuses ending a contract of construction with the authority for proposals presentation, the authorities of contracting firm can ask a compensation to the shelter of the deposit for the difference between the price of purchase of the contractor at fault and to the amount in which the auction of contracts of authority with another person, even the face value of the offer of titles.

2.4.1 Performance Securities

The performance bond guarantees that the subcontractor will execute the work in accordance with the responsibilities contract documents. Normally, it is written for 100 % of the value of the contract. Performance bonds of premium bond standard may vary in prize and in function of the risk valued for the insurer. The variables that influence the prize include the financial force of the capital, type of project and size, the duration of the construction and method of acquisition. It is calculated the tax of connection on basis of the value of the contract and, generally, it varies between 6 % and 2,5 % of the value of the contract (Nelson, 2007; McIntyre 2007). Still in agreement with Mamo (2006), the compliance guarantee generally done after the grant of the contract, for the award of contract and percentage of the total value of the contract (generally 10 per cent). The guarantor will bring bank into line in securing the correct execution of the contract in accordance with the terms and conditions of the agreement of contract (Mamo, 2006). The guarantor comes to an understanding with the employer so that, if the contractor does not stop executing and ending the contract in no way or committing any violation of his obligations, the guarantor will have to compensate and pay to a Contractor the sum of the quantity of Guarantee, being payable in the types and proportions of coins in which the price of the contract must be paid this amount. If the value of the contract increases or the duration of the contract will be extended, then it

can be necessary to alter the connection. The execution guarantee is not in itself to guarantee that they are carried out the contracts in the efficient form and in the time. There are two types of connections of performance, like it follows (Robinson et al., 1996):

1. Standard conditional bail or bond. A standard gateway is a contract of guarantee because by accepting the "joint" responsibility for the fulfillment of the obligations of the contractor in the terms of the contract of construction of the guarantor: the contractor keeps on being the main person in charge for his performance and they are not protected by the bond.
2. Unconditional bail or under demand. A link for the letter is an agreement for part of the guarantor (normally a bank) in order that the employer in breach of contract compensates contractor subject to the terms and up to an amount normally from 10 to 20 % of the main contract of sum. The contractor is not a party to this agreement. The performance bond gives security for the execution of a contract. In contracts of construction of a "guarantee of good execution" it is a security when they were contracted by the contractor, generally a bank or insurance company (by means of the payment of a prize) for the benefit of, and to request of an employer, in the very predicted amount of responsibility and executable for the employer if the standard contractor, repudiation or insolvency (Robinson et al., 1996).

2.4.2 Advance Payment Securities

The payment of security guarantees to maintain subcontracted and furnishings of offer of work and materials for the project. This connection allows advancements in the context of a contract to allow the initial purchase of essential materials necessary for the work. That provides benefits of flow of box significant for the contractor, in order

to begin the new project in accordance with the stipulated term (Mamo, 2006). In projects of public construction, bonds of payment to supply a critical legal remedy in order that contractors and suppliers would be paid. Subcontractors and suppliers who carry out public works have a right of guarantee of the mechanic against the public property. If the main contractor refuses or subcontractors and suppliers he will stop paying due to insolvency or for other reasons, such subcontractors and suppliers have not an alternative way to recover his salaries, costs and expenses, in other words, they cannot put a guarantee against the public property and it cannot prosecute the entity of the government, like they contractor they have straight contracts with the organ. Instead of that, way supplied the values of payment they of claiming and recovering for the work not paid and materials supplied in the public project. The payment guarantee of the contractor provides protection of payment for subcontractors and suppliers, labor and other costs incurred the execution of his work. Similar to an execution guarantee, the face value is a generally 100 % of the value of the contract. Normally there is no additional cost for a connection payment, if given out together with an execution guarantee. If bought alone, the cost is a little less than the pay an execution guarantees (Nelson, 2007a).

2.4.3 Retention Securities

These bonds provide the project owner with a guarantee to the value of the bond that the contractor will fulfill its defects or maintenance obligations as stated in the contract to release the retention money that should has been deducted from the contractor's interim payments (Hinze 2001; Mamo, 2006). As works of a project are completed, the contractor is paid fully for the executed works without any deduction. The client of a project is protected against default at the end of the defects liability or guaranteed maintenance period up to the amount of the bond (Winch, 2000; Mamo, 2006).

After a project has been completed a contractor will maintain some sort of responsibility and issue a warranty or guarantee. A retention/warranty promises that the completed project will perform to spec and that anything that goes wrong with the construction phase of the project within a certain amount of time after completion will be the responsibility of the contractor. Retention or Warranties are usually issued for a period of one year after occupancy and ensure that any defects will be corrected (Hinze 2001).

The traditional system of retention is to retain a percentage of interim payments during the course of the contract to accumulate a fund that is available to the customer if the contractor fails to rectify the defects in accordance with the contract. According to MWRWH (2007), the retention money that has to be hold is a percent of the value of the contractor's work up to certified completion, reducing to 2.5% up to final acceptance of the project works. Retention security give access to contractor's full payment of the project at all stages without deduction of retention money. This will create access for the contractor to use the retention money to relieve the cash flow problem.

2.4.4 Other forms of Procurement Securities

Since every construction project is very unique it is important to pick the right insurance that will best fit the project acquired. There is a multitude of risks that may arise in construction contracts that the insurance company will cover for a certain fee or premium.

Worker's Compensation insurance is required by law and is the employer's liability insurance. This type of insurance is intended to cover injured employee during the course of his work, regardless of who is at fault. The employer's liability is included in

order to take of the instance where an employee waives his rights under worker's compensation and chooses instead to file a law suit (Issa, 2006).

Commercial and Contractual General Liability insurance are usually a major part of construction contracts. CGL's generally protect the owner and contractor from legal claims that include injury to a person, death, and/or property damage. CGL's are to protect the contractor first unless the owner has been included in the policy as well (Mamo, 2006)

For further more protection a contractor may require builders risk insurance to cover losses or damages to the work in progress during the course of construction. This insurance is provided by the owner and it is of importance to the contractor that this policy is kept up to date with the value of the project. Builders risk insurance usually lasts from the day of notice to proceed until the owner takes occupancy of the building (Werremeyer, 2006). The values can be typically a branch of a great insurance company, but the operational bases of values of inscription defer a great deal of business of primary insurances of the haulage company. Conventional insurance is structured to compensate for the insured for unforeseen events or loss (Strischek and McIntyre, 2005). The insurance risk is in great part when a process in which the prizes are determined on basis of the projected losses, other costs of subscription, and the wanted profitability (Bruner, 2008).

2.4.5 Intended Effect of Procurement Securities

Tender guarantees serve two focal purposes - daily pre-qualification of transfer of risk (ENR, 2004). Titles efforts predicted pre-qualification, the guarantee of independent third ones that the contractor can hand over his work in accordance with the terms and conditions of outsourcing and of fulfilling his financial obligations (Hansen 2004).

Guarantee of the proposal only is granted after an extensive prequalification effort it values key indicative, such as the financial performance of the enterprise, you count receiving, current works, the experience of management, business and strategic plans, the terms of the contract, the methodology of employment, the details of the project. Values to secure that the contractor have the capacity organizational and financial to carry out his obligations assumed outsourcing (Schubert, 2001; SIO, 2008). Besides participants of the project of daily prequalification, guarantees of the tender to supply protection in case of the contractor cannot or it will not be going to execute. This protection is essential in public works and subcontractors and suppliers cannot prosecute the organ contractor or put a guarantee against the public property. This performance of transfer of financial risk and for the guarantee of being the main reason in order that contractors to demand public works it will be going to supply meters of performance and of payment (Schubert 2002b). Vinculação contractors and subcontractors in the commercial construction also it is becoming commoner and commoner, especially as result of the demands of the creditor in connection with the practice financing. Producing values indicate owners of the project demand contracted values (Grant, 2007) and many contractors have a politics of the enterprise that applies for the connection when of definite-daily pay (Nelson, 2007) was subcontracted above a threshold.

2.4.6 Relevance of Procurement Securities

The markets of insurances in most of the countries are built on the same basic elements: a number of issuers with necessities of long term of financing, the investors need to put a thrift or other liquid bottoms in titles that yield interest and the intermediaries who join investor and issuing, and an infrastructure that supplies a favorable environment for the valuable transaction environment furnishings, guarantee the legal title of values

furnishings and liquidation of transactions and it offers discovery of price. Stock Market acts like the market of actions buffer. That allows that the issuers and investors to convert the limitations of the market of capitals in opportunities. Financial system to be a healthy and efficient debit to have an efficient market of obligations. Opposite case, the markets of capitals, specially, it cannot fulfill his paper for the development of the economy through the capital allocation; and creation of opportunities of job through the industrialization of the economy. The development of the market of titles can be attributed to the next reasons (International Organization of Commissions of Values Furnishings, 2002):

- a) An alternative fountain of financing of the internal debt;
- b) Less capital cost;
- c) Reduced risks associated with maturity and mismatch of currency;
- d) Enlargement of the markets of capitals;
- e) Pricing efficiently with regards to credit risk; and
- f) To guarantee the financial stability.

Advocates of tender securities that present the main benefits of obligations of performance and payment include: Independent, pre-qualification Contractors of third party very often leads to overruns of cost, schedule skids as well as problems pertaining to quality. These secondary effects are the main reason that to daily payqualification of the participants in the project is so important. While it is carried out certain contractor's level of prequalification routinely performed by the insurer, the values are in the only position to value the contracted capacity, the capacity and character. The contractor-guarantee relation stretches out very much besides any project - can stretch out in decades. Due to that in the long term relationship values have access to benefits and financial data that are not readily available to a contractor. Besides, the values generally

have a quite definite process of subscription and it proved that daily pay is managed by a department of risk with years of experience to qualify contractors. In the end of the process of qualification, they have the necessary skill to translate the financial data and of performance of the contractor in the limit of the project and added attachment (Nelson 2007b, 2002b) Schubert. Protection Performance: in case of breach of contract of the responsibility of the contractor guarantor to cure the defect. The guarantor can think that it is appropriated to finance and / or to complement the contractor at fault, bringing in a substitution contractor or a financial agreement to negotiate with the contractor (SIO, 2007b). Payment protection: to payment values offer protection for a contractor do not pay when they were subcontracted, suppliers and / or of work. In the case in which the standards contractor, the guarantor does not assume the responsibility of dealing with the paid hanging creditors (SIO, 2007). Covering limits: When the values of performance and payment are used by them together, the covering combined it is the same as 200 % of the value of the contract - 100 % of the value of the contract for the performance of the contractor and 100 % of the Contractor obligations of payment (Nelson, 2007). First Covering dollar: In case of contractor values standard supply total covering for the loss. There is no franchise for claims against the bond (Nelson, 2007). Claim Service: The insurers have been trying team of management of risk that they can answer to the claims done against the values and give presence in order that subcontractor to put right standard (Nelson, 2007). Promise of the property: Most of the insurers demand personal compensation and corporative. Assets of personal property of property of the firm enterprise and it pledged itself to guarantee like prior condition for guarantee credit. The property has a great interest in operational obligations of the enterprise secure the performance and payment in projects of servitude (Nelson, 2007). In other words, the agreement predicts incentives of

compensation for executives of resolving problems to build the project - an incentive that cannot be present with the use of other mechanisms of transfer of risks.

2.4.7 Application of Procurement Securities

More than ever, they need the tendering procession of precise and opportune information for the contractors to manage the plan of pro-union person. The monetary information is looked for this by a question of wanting more proceedings; it is vital for the obligations to develop a solid understanding of the functioning of the whole business of a contractor (Hollands, 2007). The quality and frequency of the information's signature keeps on being the key in order that the success of a contractor maximizes the support of his insuring guarantee (Gichuru, 2012). To understand the approval of the business plan contractor is basic for the security relation. The contractor emergent and boy looking to begin a program of annexed can be placed under a bigger poll of which an established contractor. Contractors whom they try to capitalize on the environment of robust construction can still be waited by it in order that capacity faces a complete evaluation of the financial situation of the enterprise and of working in the search of security of the supply the next years (Ladzani, 2010).

They need to be aware of which criteria use the insurance and the measures that they can take to be qualified. Producers of Bond are almost universal financial characteristics that are important in getting guarantees of the contract of supply. More than nine in each 10 they believe that the force of the balance (96 %) and presentation of the financial demonstrations (93 %) as important factors in getting guarantee of credit for his clients' construction contractors (Sader, 2000). Likewise, the history of the enterprise is an essential dimension. Eight in each 10 producers (81 %) titles to quote a historical one of successful projects as an important criterion in obtaining was guaranteeing of credit,

while an equal number will mention solid profitability (77 %) or experience in the type of project (78 %) (ibid). General management is an area that, ineffective, it is possible to take to financial problems. Two thirds (67 %) of the producing titles to quote the reputation of the enterprise and / or directors like important criteria (Keller, 2011). Almost three rooms (72 %) it quotes the experience of management of so important team. Accounting practices general is another focus area. Using a public accountant certified (CPA) with knowledge of the industry it is important how by three quarters (74 %) of the producers of titles (Ball, 2014). On the 6th of October when spread (60 %) and accounting policies (56 %) and other important criteria quoted financial declaration (Kiewiet and McCubbins, 2014).

Another critical phase in the connection process is it of valuing the capacity of a contractor. Almost all (96 %) it brings into line that the quantity of working capital is an important economical factor in this evaluation (Kiewiet and McCubbins, 2014). On the 9th of October it agrees that the levels of wallet (90 %) and a historical one of solid profits (86 %) also are important (ibid). The financial token prepared by the construction client it is another important piece when it is the question of valuing the capacity of the contractor. Almost all the titles producers agree that a set of financial demonstrations must contain current contracts a calendar (99%), be prepared when there is using the method of the percentage of accounting conclusion (98 %) and contain financial spreads / Known on the foot (94 %) (Yu, 2014). With the guarantee, the insurer has not expectation of loss. Guarantors to see the standard of the contractor or of the failure as you were avoiding (Strischek and McIntyre, 2005). As result, the subscription process more is likened to the used one with credit and industry of loans. Guarantor to take a decision of spreading the guarantee out "of credit" in the name of a contractor or

subcontractor on basis of the capacity of the enterprise to fulfill the obligation of the underlying contract. (Bruner, 2008). To determine the capacity of solvency and there guarantees daily pay-qualification on basis of series of key indicative, such as financial solidity, performance, experience of project and contractors expertize local. Also titles very often demand personal guarantees and compensation for the owners of the enterprise of construction.

2.4.8 The Challenges in the use of Procurement Securities

Most of the insurers of titles and expected consolidation will make it more difficult for big and small contractors to obtain values (Grant, 2005; ENR, 2005; Ramsey, 2007). Actually the necessity of co-guarantors and / or reduction of compulsory limits to the great projects persists. Linking emergent contractors without significant capital or experience remains a challenge. The market for small established contractors became more competitive with the entry of new enterprises that attend to this market or existent enterprises to gain authority to write in additional jurisdictions. The general availability of the credit seems to be improving the security. Industry seems appropriate capacity and guarantees they are disposed spreading guarantee of credit out for the contractors with whom you link have a good relationship of long term (Ramsey, 2007b).

The criticism expressed regarding general public offer was guaranteed by you that it is centered in two main preoccupations: a) the time period for the answer warns to a defect, b) the narrow perspective of the answer of the bond (Gray, 2002). Extension / late answer: A criticism frequently definite enterprise of security is the quantity of time necessary for the guarantee to begin an action for lack of payment of a contractor. After the notification of the main guarantor has several independent legal obligations for the

creditor and of the principal. The guarantor is obliged to drive a complete investigation to determine the degree of responsibility of the director and of the legitimacy of the standard through the development of a factual register. If the guarantee is not investigating correctly a demand for titles correctly, the guarantee can lose certain rights regarding the opportunity for staking a claim of compensation against the director of obligations, or credit commerce can be subject to accusations of bad faith or disloyal practices. The period of time necessary for this inquiry is influenced by series of variables, including the present of the information when guarantee was asked for applying to support the allegation.

With the exception of very simple cases, the investigation of the guarantee can take weeks or even months, during which the factory effects are undulating in the whole subcontractor I project (ENR 2004, Gray, 2002). The answer time is spread out very often because the parts disagree impact of the project and / or necessary measures to put right (Ferrini, 2006) actions on the subject of responsibility for lack of payment of the defect. The guarantee can, as a last resort responsible for the adverse effects of a late answer, but, meantime, the adverse effects schedule of the project is left and the costs keep on building (ENR, 2004). Put in perspective nearby Guarantor / absent of control: As soon as the restraint ended his investigation that has the authority to decide on the form of contractor to repair a defect in the terms of his obligations of obligation. The contractor can be consulted, but the final answer is to criterion of the guarantee. Legal considerations and of business it can determine the answer of the guarantee. The medicine of the guarantee can be done from the perspective of his principal (main contractor), and remedy cannot attend fully the necessities and preoccupations of the client or the project (Gray, 2002).

2.5 Security Bonds/Guarantees in Ghana

The growth of the economy of any country depends in great part the creation of sound, efficient and efficient financial system of this country. A quite developed financial system fulfills an important paper in the acceleration of the economic growth by means of the thrift mobilization and to make easy the investment of an efficient way (Mu, 2007). Financial market consists in different - Money Market, Mercado of Capitals Market of Derivative etc. All the markets have a paper interactive in the development of the economy through the capital formation through fundraising, the industrialization of the economy through the provision of appropriate bottoms, in services rendered, linking the industrial investors, etc. Besides, this one applies for a strong regulation picture, of sound and of investment of sensitive administrative infrastructure, for the fiscal support for his effective paper in the economic development.

Financial sector of Ghana is characterized by the dominant presence of the commercial banks. Though, a paradigm change in the degree of power has been observed in the last years with the appearance of private commercial banks, the bank sector was responsible for nearly 75 per cent of the total financial system. Most of the available bottoms to go to the Bank of Ghana like deposits and channeled loans. However, the BOG regulates the financial sector in the country. The market of debt is an integrant part of the financial market it fulfills a complementary paper in the development of the economy through the bottoms attribution to the different deficit sectors. As in any other country, a market of negotiable titles quite developed is essential to guarantee the stability and efficiency of the financial market in Ghana. An efficient market for the insurance is important for the management of the public debt and liquidity of the banks and for the efficient driving of the monetary politics. Up to now, the market bondholder has been fulfilling

a paper limited in the economy. The priority of the development of the markets of capitals in Ghana must be it of promoting the development of the market of titles. Without a market of titles functioning, the processes of transmission of measures of monetary politics might be avoided by it, and the impact wanted on the real economy cannot be carried out by them, compromising the efficiency of the operations of monetary politics. In view of that, the present study was carried out in order to value the current state of the market of titles and identification of problems and factors that drive the development of the market of titles in the sector of the construction of Ghana.

2.6 Tender Security Premiums and Recovery

Superior increases it will be able to have stabilized titles - or not, depending on several factors. While many people in the report of the industry of guarantee to stabilize the prices, individual factors to fulfill a bigger paper in the creation of the prize, including the size and the capacity of connection of the contractor, geographical area, type of construction, and specific project. Realistically, the values remain very low tool price of the management of risks to protect 100 per cent profit and 100 per cent of the payment offered to a creditor. While many people indicate that averages and girls stabilized the prizes for the contractors, the insurers can keep on adjusting the prices the widest scale represents the consumption of high risk. With raw, more than a focus on the risk of the individual project and contractor to be taken into account. The duration of the project is an important factor in the prize. The projects that last more than two years generally have more risk associated with them and it will have price in agreement. However, with exhibition of high capacity or of high risk on the credit it can have the counts to deal with more elevated taxes. Not even all the enterprises guarantee taxes / taxes of insurances realist, but it is important that the enterprises do connections

attractive line for reinsurers and its shareholders. Also it is important to know that you are working for and that it is working for you.

Corrupt reputation-owner and the potential to work other in a project-debit is to be taken seriously into account. As the tight market, the enterprises of guarantee increased his structures of prices to cover the increase of the losses and increase of the cost of reinsurance, personal and other costs of doing business. After a short adaptation period, it was guaranteeing the prizes of insurance that they are more realistic for the supplied value.

2.7 Summary of Chapter

In this chapter the literature on security of supply in the construction sector is reviewed. The chapter also reviewed the various types of security of supply in the construction sector. The chapter also reviewed the implementation of security of supply and the effect of the planned tender guarantees. The literature has indicated that very little research has been done on the relevance of tender securities in the construction sector in Ghana. Considering the above factors identified, the next chapter gives an idea of the method necessary to use these factors to investigate the relevance and challenges of security of supply in the construction sector of Ghana.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Chapter three talks about the approach of the research study, the enthusiasm and discussion of the methods employed in collecting the data are also described in this Chapter. Research methodology announces in this study the particular procedures and strategies used in undertaking the research agenda and the interpretation of the collected information or data.

3.2 Population

The population of the study or the research population in this context is described as a set of individuals or respondents having unique common characteristics of trait Collection. The population of the study comprised K1 road contractors involved in road projects in the Greater Accra region registered with the Ministry of Roads and Highway and the Urban Roads in Ghana. The main reason for using this category of class is that contractors have well organized and easily accessible based on the address on the registration structure. Greater Accra Region also was attacked geographic area as the maximum construction activity takes place within the area, he said, also all road contractors such registration have their offices in that location. The population of this study consists of all those involved in the process of tender securities including surveyors of both contractors and consultants (MRHW), project on road projects in the Greater Accra Region of Ghana. The purpose for this category of respondents being chosen is due to the direct and indirect ways their activities relate to the acquisition of tender securities. The research covers a population of thirty (30) financial A1B1 road contractors.

3.3 Sample and sampling technique

Interviewing a total population of respondents can be very difficult and stressful. Its difficulty can be due to financial difficulties, time constraints and other factors. Due to such circumstances sampling becomes impossible to avoid in research work. The study conducted by DeVaus (2001), indicated that the processes of undertaken sampling makes it certain to reduce a study to a relatively small portion of the entire population. From this it can be said that a sample is thus a representative selection of a whole population that is investigated into in acquiring statistical information of the whole.

In Creswell (1994) and Patton (2002), it is seen that to sample a group of respondents with specific type of information, skills and knowledge, each of the sampling techniques that can be applied is Purposive sampling. Moreover, the study purposively selected groups within the road construction firms who were directly involved in tender securities process and identified and selected: quantity surveyors and project managers. It is very necessary and relevant to determine the size of the sample in every research study. A number of items must be taken into consideration when determining the sample size. DeVaus (2001) indicated such factors as; size of population, risk of choosing a “bad “sample and the allowable sample error. In order to determine a good sampling method one must consider some factors. A census approach was adopted since the total number of A1B1 road contractor was thirty (30) in number from the register of the ministry.

3.4 Data collection

The techniques and methods used in collecting data or information are an essential aspect of this research study in question. Using one or more instruments in collecting information or data strengthens and gives some form of reputation to the study (Patton, 2002). To represent the true nature or picture of the study there need to be more than one data collection method. In this sense, two separate sources are needed for the research data. This approach was used because it showed the problems that could not be bred from single instrument for data collection. Primary and secondary data sources were studied in order to obtain information necessary for the study. In this sense interviewed and collaborators of the study were identified and collected from a population of respondents who are known to have knowledge and necessary interest in the study area and play a key role in the process of tender security in the construction industry of Ghana.

3.4.1 Primary Data

Until you ask people what they know about an item one cannot assume what people think (Al-Moghany, 2006). In terms of data collection when conducting research like surveys, the questionnaire is probably the most widely used data collection tool to find out opinions and views (Naoum, 1998). McQueen and Knussen (2002) see questionnaire to be the most effective way in terms of cost to engage a lot of people in a study to acquire good and better results. For the purposes of this study the use of interviews and questionnaires were employed on the objectives set in the study. Primary data were acquired from the sample of respondents chosen from the research population on the sample frame. Analysis drawn from the information gotten in this study is significant based on these data. The interviews were adapted to detailed information concerning respondent's knowledge on the security of supply to the construction industry importance. It is also used to collect preliminary to assist in structuring the questionnaire information. The survey was adapted to obtain information on the thought of respondents concerning the effect of the security and the challenges of bidding with the use of tender securities in contracting works.

3.5 Questionnaire design

The researcher developed the research questions which were later reviewed by experts in academia and financial institutions. Following in order of place, pilot questionnaire was conducted in addition to interviewing five (5) other respondents or participants to enable the researcher identify any discrepancies in the questionnaire test. Questionnaire is designed to collect general data on construction professional involved in the process of bid security. The items provided in the questionnaire were rated on a five point Likert scale by the participants. The questionnaire tool or instrument consisted of the following sections:

Section A, requested the general demographics of the respondents through an

objective test participant.

Section B, requested information on the respondent on the effect of tender securities in the procurement process.

In **Section C 1 - Section C 5** each element is reduced with the statement: Strongly agree, agree, disagree, and strongly disagree respectively. Question under the Section C demanded information on challenges associated with security of supply.

3.5.1 Questionnaire Administration

The initial questionnaire developed was pilot tested by the researcher to ensure that the questions were clear and precise, in order to have consistent answers that would tailor towards the objectives of the study. To improve the reliability and validity of the questionnaire, few questions were reviewed as a result of the lack of response. The Department of Building Technology in the Faculty of Built Environment under the College of Art and Built Environment issued a cover introductory letter to be submitted in addition to the questionnaire in order for respondents to know that the purpose for the collection of data was purely academic. The structured questionnaires were administered by the researcher. Some of the questionnaires were also sent electronically by mail to respondents out of far away from the researcher. In order for conformity the respondents were given enough time to respond to the questionnaires and also make them ready for collection or return them electronically. The information gotten from the questionnaires (primary data) was reviewed by the researcher to ensure maximum precision, genuineness, completeness, consistency and to reduce imprecision.

3.6 Research design

The design of a research takes into consideration a strategy needed to provide response to the research questions or problems and the necessary instruments or concepts needed for the requisite data for the study (Frazer and Lawley, 2000). Bailey (1987) indicated

that, the selection of an appropriate research methodology is dependent on the particular paradigm adopted. It is appropriate to employ different designs of research depending on the study in question even though researches can use different research strategies. Having said this, it is still likely that by choosing just one of the types, there can be much significant contribution a researcher can do to the development of theory (Saunders et al., 2007). This research employs the quantitative research design given the nature of the agenda and the measurement's characteristics. Besides, as recounted in the literature review, case study which is a quantitative research strategy is the most suitable strategy to adopt in measurement of the implementation challenges and this is most consistently adopted design.

3.7 Data analysis

The one major research approach was used in studies; quantitative approach was employed for the purposes of the study. The data after collection went through editing, sorting, and finally coding. To analyze the data collected the study employed the services of the Statistical Package for Social Scientists (SPSS Version 20) and Microsoft excel to come up with frequency tables, pie charts, bar charts and other descriptive results. Discussions of the analyses were done by the researcher. The basis for looking out for patterns and common trends running through the responses was as a result of the outcome from the analyses which was with respect to tender securities in the construction industry of Ghana. Deviations from the respondents were established from the analysis using Mean Score ranking and standard deviation.

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CHAPTER FOUR: ANALYSIS AND DISCUSSIONS

4.1 Introduction

Data analysis details and results discussion of the study was obtained after survey of questionnaire which provided basis for analysis of data. This chapter is grouped into four sections. The first deals with the general information of the respondent in the study. The second sections focus on the extent of tender securities, third looks at the relevance of tender securities while the fourth focus on challenges associated with the use of tender securities. Also, analyses were centered on the objectives of this study.

4.2 Background information

In all a population target of twenty-five (25) was selected through 'purposive sampling', with data collected through the administering of questionnaires from September, 2014 and ended in November, 2014. The respondents reached in total were twenty (20) out in the targeted geographically area through personal contacts. Out of the twenty-five (25) a total of 20 questionnaires were received constituting a response rate of 80%.

4.3 Data analysis

4.3.1 Analysis of the Biographic Data

Questions involving in professional background, educational background, years of experience etc. was analyzed using descriptive statistics with the use of frequency and percentage. The biographic data gives a data to assess and increase the precision and reliability of the respondent.

Table 4.1: Characteristics and Analysis of the Demographic Data

VARIABLES		FREQUENC Y	PERCENTA GE
Professional Background	Project Manager	8	40%
	Civil Engineer	-	-
	Quantity Surveyor	12	60%
	Structural Engineer	-	-
Educational Level	GCE A' Level/SSCE or equivalent	-	-
	Higher National Educational Diploma (HND)	4	19%
	Bachelor Degree	9	42.9%
	MBA/MSc	8	38.1%
Sector of Road	Feeder Roads	-	-
	Urban Roads	-	-
	Ghana Highway Authority	-	-
	Ministry of Road and Highway	-	-
	Consultant	20	100%
	Contractor	-	-
Type of Road	Highway	7	35%
	Urban	13	65%
	Feeder Road	-	-
Years of Experience	Less than 5years	6	30%
	6-10years	10	50%
	11-20years	4	20%
	Over 20years	-	-

Source: Field Data

From Table 4.1 above, on professional background of the respondent, in order to establish the reliability and validity and precision of the assembly data. Sixty percent (60%) of the respondent are Quantity Surveyors while the remaining forty (40%) are project managers. This is because the two professional are mainly involve in issues relating to tender securities in the road sector.

On the educational background of respondent, seventy (70%) percent of the respondent hold bachelor's degree, while 30% hold MBA/ MSc degree in their respective profession. While in the area of experience, 50% respondents out of the 20 responds had 6-10 years' experience whereas, 30% had experience less than 5years. In addition 20% of respondents with experience from 11-20 years confirm that the respondents have adequate experience on the subject matter and are more likely to give accurate answers to the variables. Table 4.1 further indicates that most of the respondents are involved in highways (35%) and urban (65%) road project.

4.3.2 Types of Procurement Securities

On the type of tender securities accessed from financial institutions; forty-five (45%) of the respondent assess bid security, with 35% accessing payment security and the remaining twenty (20%) for retention securities.” (see figure 4.1). This confirms to the finding that on most construction projects constructed publicly, three types of securities are routinely required: bid security performance security, and payment security (Robinson et al., 1996; Mamo, 2006).

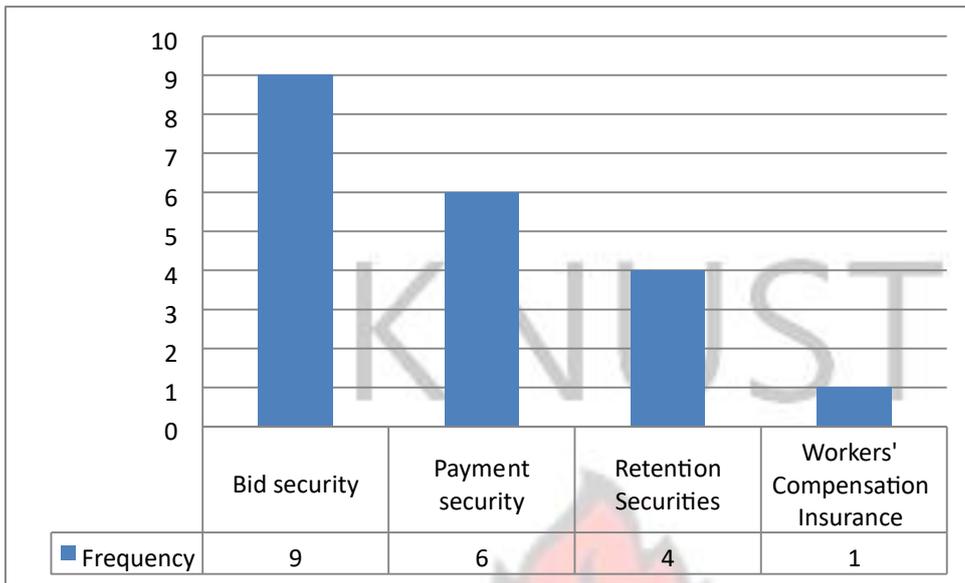


Figure 4.1: Types of Procurement Securities

From Figure 4.2, sixty-five (65%) of the respondent often get ‘Conditional bond or default bond’ for their respective firms, while 35% of the respondent access ‘Unconditional bond or on-demand bond’.

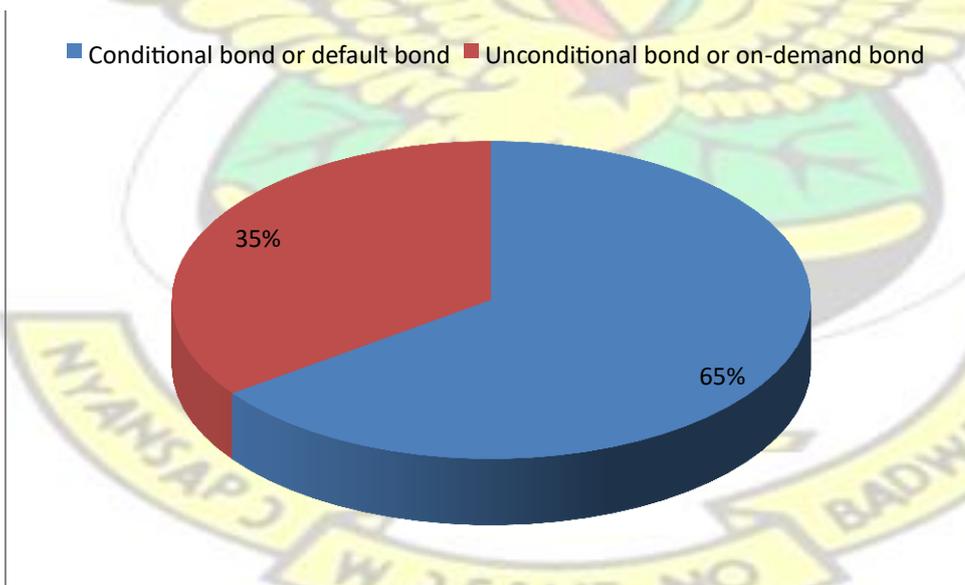


Figure 4.2: Securities Provided

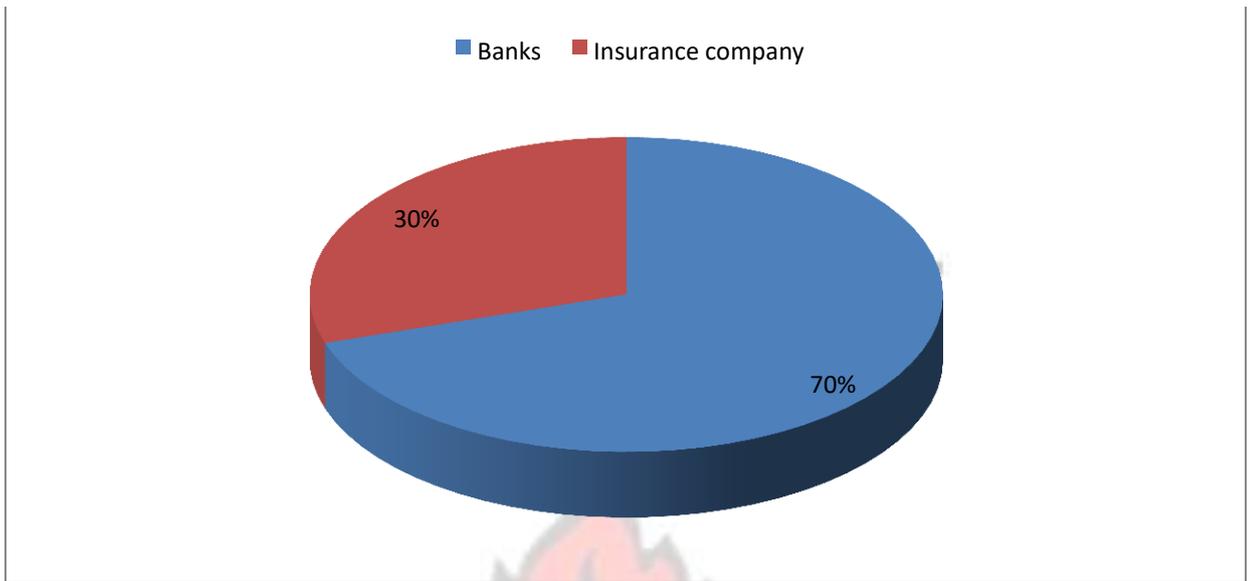


Figure 4.3: Procurement Security Insurer

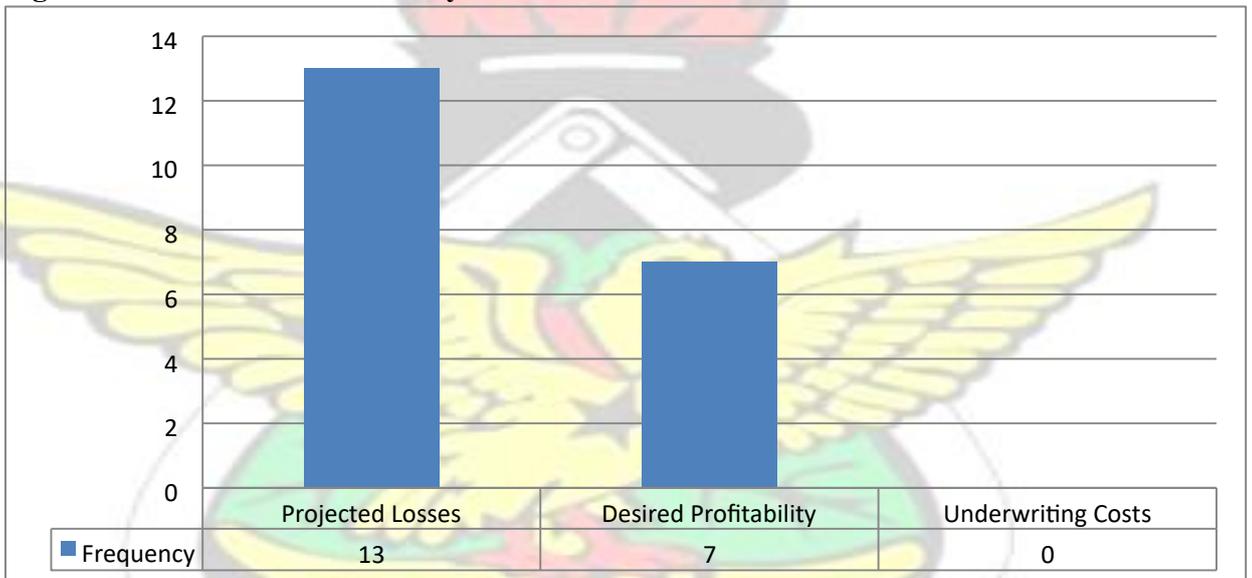


Figure4.4: Tender Security Premiums

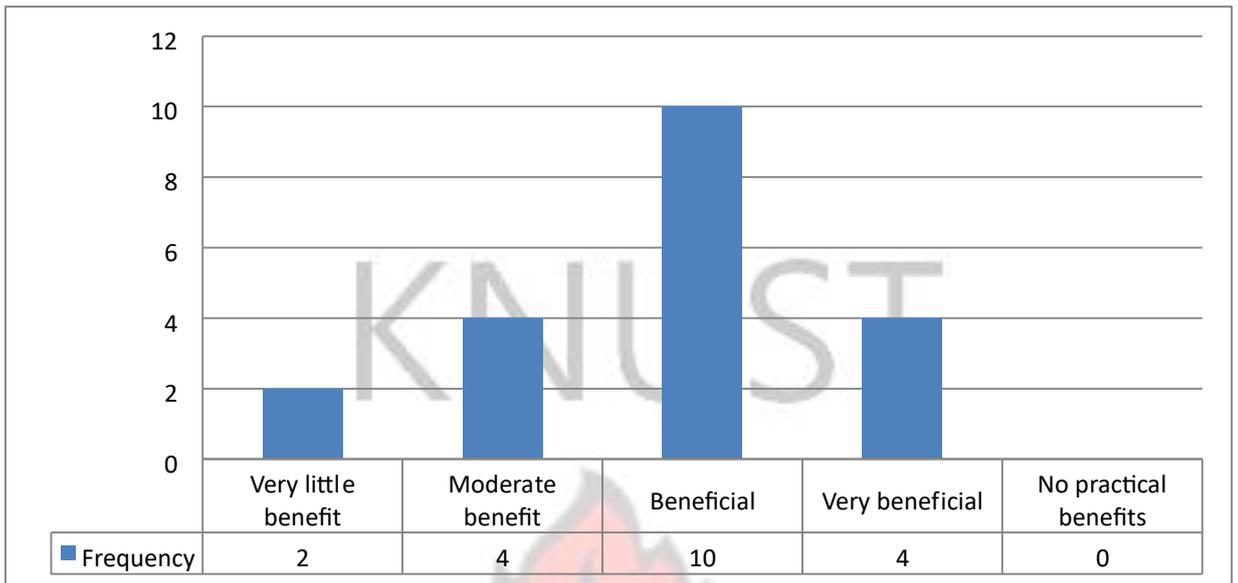


Figure 4.5: Benefits of Tender Security

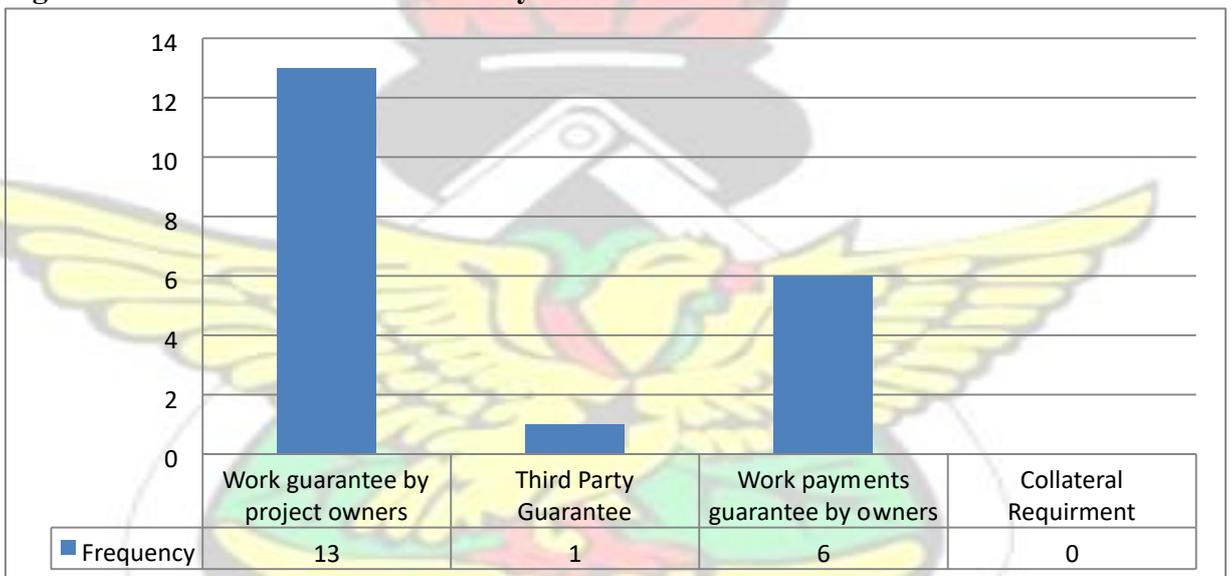


Figure 4.6: Precondition Qualification

From Figure 4.3; seventy (70%) of tender securities are issued by the banks with the remaining 30% issued by insurance companies. Also, figure 4.4 reveals that 65% of premium paid for tender securities are based on “Projected Losses” while the remaining 35% is based on ‘Desired profitability’. On the benefits of tender securities to the road sector, figure 4.5 shows that more than 60% agreed to the benefit of tender security. On precondition qualification for tender security was based on ‘Work guarantee by project

owners” with 65%, ‘Work payments guarantee by owners” with 30% while ‘Third Party Guarantee’ with 5%.

4.3.2 Analysis of Dependent Variables

Mean score and Standard Deviation was the statistical tool adopted for the study. The respondent ranked the various the variables in terms of extent of effects, relevance and challenges of tender securities in the procurement of works. For the purposes of the study a criterion is deemed significant if it had a mean of 3.5. The importance and significance of the standard deviation comes to play when two or more factors have the same mean after analysis. If this occurs, the factor with the least standard deviation amongst the two is allocated the higher significance ranking in Ahadzie (2007) study, it is seen that there is some consistency in agreement among the respondents with factors or criteria having standard deviations (SD) less than 1.0.

4.3.2.1 Effects of Tender Security on Procurement Process

In to access the effects of tender security on procurement process in the road sector, it deemed necessary to ascertain the effect of tender securities. In view of this respondents were asked to rate them according to the five-point Likert scale items (1=Not Important, 2=Least Important, 3=Averagely Important, 4=Very Important, 5=Highly Important). Hence in establishing the level of practice, two different tools were adopted – mean score and standard deviation. Hence, all the data were pooled together in Tables 4.2 below;

Table 4.2 Effects of Tender Security on Procurement Process

Variable	N	Mean	Std. Deviation	Ranking
Transfer of performance and financial risk to the surety	20	4.6500	.48936	1 st
Provide an assurance of performance (Performance Protection)	20	4.6000	.50262	2 nd

Guarantee against default at the end of the defect liability period	20	4.5000	.51299	3 rd
Provide protection in the event that the contractor is unable or unwilling to perform	20	4.4000	.50262	4 th
Assurance of bid price guarantee	20	4.3000	.47016	5 th
Payment Protection for subcontractors and suppliers	20	4.0000	.00000	6 th
Ownership Commitment	20	3.7500	.44426	7 th
Prequalify project participant (independent, third party prequalification)	20	3.5500	.51042	8 th
Protection for unforeseen event or loss	20	3.5000	.68825	9 th
Coverage Limits	20	3.4500	.51042	10 th

The results from Table 4.2 indicate a high level of agreement among the respondent with all the variables having a standard deviation below one (1). All the variables have mean score values above 3.5 except the “Coverage Limit” with a mean scores of

3.45.

“Transfer of performance and financial risk to the surety”, “Provide an assurance of performance (Performance Protection)”, “Guarantee against default at the end of the defect liability period”, “Provide protection in the event that the contractor is unable or unwilling to perform”, “Assurance of bid price guarantee” and “Payment Protection for subcontractors and suppliers” were the major effect of tender security on the procurement process with mean value above 4.00 in their order of ranking.

The results confirm findings that securities provides full confidence that the contractor is capable of providing subcontracting duties having financial capabilities (Schubert, 2001; Schubert 2002b; Hansen 2004; Grant Thornton 2007; Nelson 2007a).

4.3.2.2 Relevance of Tender Securities in Procurement of Works

The next part sought to identify the importance of tender securities in the procurement of works. Table 4.3 below shows that ‘Ensures bid is submitted in good faith’ was the highest ranked relevance of tender security with a mean value of 4.800 and a Std.

deviation of 0.410. The second and third ranked relevance were ‘Retention securities protect clients against default at the end of the defects liability’ and ‘Reduce the risk of default’ with a mean value of 4.700 and 4.500 respectively. Whilst the relevance that ‘Ensures contractor enters into the contract at the bid price’ was the least ranked variable with a mean score of 4.200 and a standard deviation of 1.01.

This affirms the findings of (Schubert, 2002b; Mamo, 2006; Mu, 2007; Nelson 2007a; Nelson 2007b,) of the importance of tender securities to contractor by speeding up the growth of the economy through mobilizing savings and facilitating investment in an effective manner.

Table 4.3 Relevance of Tender Securities in Procurement of Works

Variables	N	Mean	Std. Deviation	Ranking
Ensures bid is submitted in good faith	20	4.8000	.41039	1 st
Retention securities protect clients against default at the end of the defects liability	20	4.7000	.47016	2 nd
Reduce the risk of default	20	4.5000	.51299	3 rd
Builders risk insurance covers losses or damages	20	4.4500	.51042	4 th
Ensures that contractors provide the required performance and payment bonds	20	4.4000	.50262	5 th
Ensures contractor enters into the contract at the bid price	20	4.2000	1.00525	6 th
Performance compensation insurance provides cover for injured employees	20	3.4500	.60481	7 th
A payment security guarantees payment to contain subcontractors and supplies	20	3.4500	.99868	8 th
Payment securities allow subcontractors to make claims and recover for unpaid labour	20	3.3500	.67082	9 th
A payment security allows advance payments under an awarded contract to enable initial purchase	20	3.0500	.94451	10 th

4.3.2.3 Challenges Associated with Tender Security.

Following literature review a number of challenges associated with tender securities were examined. In response to this item, it was demanded from respondents to rate the significance level of the challenges provided using the Likert scale. The results can be seen in Table 4.4 below. It has already been stated that a criterion is deemed significant if it had a mean of 3.5 or more.

The results further revealed that ‘Organization and Financial capability’, ‘Prolong time required in investigating the defaults’, ‘Narrow perspective of the surety response’ and ‘High premium charges on tender securities’ were the main challenges associated with tender securities in the procurement process of work with a mean scores above 3.5.

The highest ranked challenge was ‘Organization and Financial capability’ which confirms with the finding of Schubert (2001) that securities provides full confidence that the contractor is capable of providing subcontracting duties having financial capabilities. The second and third ranked challenge were ‘Prolong time required in investigating the defaults’ and ‘Narrow perspective of the surety response’ with mean vales of 4.05 and 4.05 respectively affirming to the studies conducted by (Ferrini, 2006) response time is delayed during disputes among parties. Also, Gray (2002) pointed out that the response may not fully address the concern or needs of all the parties.

Table 4.4 Challenges Associated with Tender Securities

Variables	N	Mean	Std. Deviation	Ranking
Organization and Financial capability	20	4.5000	.51299	1 st
Prolong time required in investigating the defaults	20	4.0500	.68633	2 nd

Narrow perspective of the surety response	20	4.0500	.82558	3 rd
High premium charges on tender securities	20	3.8500	.87509	4 th
Length of time for surety response to a default	20	3.4000	1.23117	5 th
Remedy provided does not fully address the need or concerns of the contractor or the project.	20	2.7500	.96655	6 th

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The study sought to assess the relevance of procurement securities in the procurement of works within the road construction sector of Ghana. The research objectives were developed to assist in achieving the aim.

5.2 Summary of findings

The study's aim was to assess the relevance of procurement securities in the procurement of works within the road construction sector of Ghana. The following specific objectives were set to achieve this main aim:

5.2.1 To identify the various types of procurement securities;

The results from the study showed that that on most public construction projects, the main tender securities occasionally used were bid security performance security, and payment security. Further, tender securities were issued mostly by banks and insurance company with premium charged based on projected and desired profitability. Also, precondition qualification was based on work guarantee by project owners and work payments guarantee by owners.

5.2.2 To determine the effect of identified procurement securities on the procurement process

In achieving the second objective mean scores and standard deviation statistical tools were used. Transfer of performance and financial risk to the guarantee, provide an assurance of performance, guarantee against default at the end of the defect liability period, give protection in the event that the contractor is incapable or incompetent to carry out the work, assurance of bid price guarantee and payment protection for subcontractors and suppliers were the major identified effect of tender securities in the road sector.

5.2.3 To identify the challenges associated with the use of the identified procurement securities;

The study revealed that the main challenges associated with the use of procurement securities in the road sector were organization and financial capability, prolong time required in investigating the defaults, narrow perspective of the surety response and high premium charges on tender securities.

5.2.4 To determine the relative relevance of the identified procurement securities to the in procurement of works;

Ensuring bid are submitted in good faith, retention securities protect clients against default at the end of the defects liability, reduce the risk of default, builders risk insurance covers losses or damages, ensures that contractors provide the required performance and payment bonds and ensures contractor enters into the contract at the bid price were the major relevance of tender security in the procurement of work process in the road sector.

5.3 Conclusion

It is also very clear that procurement securities ensure bids are submitted in good faith, performance according to standards and specification and the protection of clients

against default at the end of the defects liability in the road sector. With the large number of infrastructure development projects in Ghana, implementation of these projects, it is required to have financially as well as technically and managerially capable construction firms. It is indicated from the collected data of this study that most of the domestic construction firms have acute financial scarcity to execute and complete their project. The analysis of the collected data appears to suggest that the financial scarcity in the Ghanaian road sector due to organizational and managerial capacity of firms makes it difficult for them to access financial packages from the financial institution. This study provides evidences that organization and financial capability, prolong time required in investigating the defaults, narrow perspective of the surety response and high premium charges on tender securities are major challenges faced in the road sector in accessing tender securities.

5.4 Recommendation

The section proposed recommendations arising from this research;

- Financial institutions should reduce the safety margin set for collaterals secured for bank guarantee and construction loans.
- The construction firms should assign managerially capable and cost conscious personnel in their projects.
- Joint venture agreement among domestic firm will help them to be financially, technically and managerially strong to access credits from the financial institutions.
- Governmental body has to make sure that the contractors come with the required capital and equipment to upgrade their classes and to be registered in the infrastructure development activities of the country.

5.5 Direction for future research

The following directions for future studies are therefore suggested:

- Further research study to the challenges faced by all parties involved in the road sector in accessing securities from financial institution.
- Similarly, future studies should provide the springboard for research to investigate the prequalification condition for banks in issuing procurement securities.



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Appendices

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF BUILDING TECHNOLOGY

MSc. PROCUREMENT MANAGEMENT

Confidential survey questionnaire

Topic: RELEVANCE OF TENDER SECURITY IN THE PROCUREMENT OF WORKS IN THE GHANAIAN CONSTRUCTION INDUSTRY: A CASE

STUDY OF THE ROAD SECTOR

Introduction: I am a post-graduate student at the Kwame Nkrumah University of Science and Technology studying for a Master of Science Degree in Procurement Management. As part of successful completion of this programme, I am conducting a research into the relevance of tender securities in the procurement of works within the road construction sector in Ghana. Your response to this research will be confidential and will be used exclusively for academic purposes. The questionnaire is divided into three main parts.

Thank you in anticipation of your cooperation.

Please return or direct any enquiries to:

Afua Baiden Tel:

0244630578

E-mail:

(SECTION A) – RESPONDENT PROFILE

Please tick answers where applicable for the following questions:

1. What is your professional background?

- A. Project Manager
- B. Civil Engineer
- C. Quantity Surveyor
- D. Structural Engineer
- E. Others

(Specify).....

2. What is your highest educational level?

A. GCE A' Level / SSSCE or equivalent

B. Higher National Diploma (HND)

C. Bachelor Degree

D. MBA / MSc

E. Others

(Specify).....

3. Which of the following sectors of road do you belong to?

A. Feeder roads

B. Urban roads

C. Ghana Highway Authority

D. Ministry of Roads and Highway

E. Consultant

F. Contractor

G. Others, please specify

4. What major type of road construction do you manage?

A. Highway

B. Urban Road

C. Feeder Road

D. Others (please specify)...**simple streets and inroads within the various military barracks.....**

5. How many years now have you been working in your present capacity?

A. Less than 5 years

B. 6 – 10years

C. 11 – 20years

D. Over 20years

SECTION B: TYPES OF TENDER SECURITIES

6. To what extent does your outfit use tender securities in the Procurement of road infrastructure?

a. Never b. Sometimes c. Often d. Very Often

7. What type of securities and guarantees are you getting from your financial institution?

a. Bid security b. Performance security c. Payment security

d. Retention Securities e. Builders risk insurance

f. Worker's Compensation insurance

8. What type of tender securities do you provide to your clients?

a. Conditional bond or default bond b. Unconditional bond or on-demand bond

9. What form of financial institution provides you the kind Tender securities provided to clients?

a. Bank

b. Insurance company

c. others (Please specify)

10. The premiums paid for the securities are based on

a. Projected losses [] b. Underwriting costs [] c. Desired profitability []

**SECTION C: THE EFFECTS OF THE IDENTIFIED TENDER SECURITIES
ON THE PROCUREMENT PROCESS IN THE ROAD SECTOR**

11. To what extent will you assess the benefits of tender securities in the procurement of road infrastructure projects in Ghana?

- a. No practical benefit [] b. Very little benefit [] c. Moderate benefit []
d. Beneficial [] e. Very beneficial []

12. How effective is tender securities to procurement of road infrastructure in Ghana?

- a. Not effective at all [] b. Little effective [] c. Moderately effective []
d. Effective [] e. Very effective []

13. The following have been identified as the effects associated with the use of Tender securities on the procurement process in the road sector. What level of importance to your organization are the perceived effects listed below?

Please ranking from 1-5, where: 1 - Not Important, 2 - Least Important, 3 - Averagely Important, 4 -Very Important, 5 - Highly Important.

Effects	1	2	3	4	5
Transfer of performance and financial risk to the surety					
Assurance of bid price guarantee					
Payment Protection for subcontractors and suppliers					
Ownership Commitment					
Provide an assurance of performance (Performance Protection)					

Coverage Limits					
Protection for unforeseen event or loss					
Prequalify project participant (independent, third party prequalification)					
Provide protection in the event that the contractor is unable or unwilling to perform					
Guarantee against default at the end of the defect liability period					
Others(please specify)					

SECTION D: RELEVANCE OF TENDER SECURITIES IN PROCUREMENT OF WORKS

14. Please indicate your level of agreement to the underlisted factors as relevance of bid securities to procurement of road infrastructure in Ghana by choosing from a scale of 1 (strongly disagree) to 5 (strongly agree). (1-strongly disagree, 2-disagree, 3-fairly agree, 4-agree and 5-strongly agree)

Relevance of securities	1	2	3	4	5
Ensures bid is submitted in good faith					
Ensures contractor enters into the contract at the bid price					
Ensures that contractors provide the required performance and payment bonds					
Retention securities protect clients against default at the end of the defects liability					
A payment security guarantees payment to contain subcontractors and supplies					
A payment security allows advance payments under an awarded contract to enable initial purchase					

Payment securities allow subcontractors to make claims and recover for unpaid labour					
Performance compensation insurance provides cover for injured employees					
Builders risk insurance covers losses or damages					
Reduce the risk of default					

SECTION E: THE CHALLENGES ASSOCIATED WITH THE USE OF THE IDENTIFIED TENDER SECURITIES ON THE PROCUREMENT PROCESS IN THE ROAD SECTOR

15. What are the challenges associated with the use of the identified tender securities and their relative relevance to their objectives in the procurement of works?

(Rate on scale of 1-5).

1=Not Important, 2=Not Very Important, 3=Somewhat important, 4=Very Important, 5=Extremely Important

Challenges	1	2	3	4	5
Organization and Financial capability					
Length of time for surety response to a default					
Narrow perspective of the surety response					
High premium charges on tender securities					
Prolong time required in investigating the defaults					
Remedy provided does not fully address the need or concerns of the contractor or the project.					
Others(please specify)					

16. If you have a cash flow problem and are not able to get loan from a bank, how you will try to solve your cash flow problem of your projects?take short term facilities from non-bank financial institution minimum period of 90days.....

17. What do you recommend as a solution for the financial problem of the domestic construction firms other than bank facilities? .

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18. What preconditions do you fulfilled before accessing securities from financial institutions?

- a) Collateral Requirement
- c) Work guarantee by project owners
- b) Third Party Guarantee
- d) Work payments guarantee by owners

If there are others please specify.....

19. As you very well know that cost of providing bank guarantee for advance payments from the domestic banks is high and the contractor is required to provide collateral to secure the repayment. Nowadays, it has become very difficult for the domestic construction firms to provide collateral for the banks to get the advance payment guarantee. As a project owner, what another option do you propose to secure the advance repayment by the contractor instead of advance payment guarantee from banks?

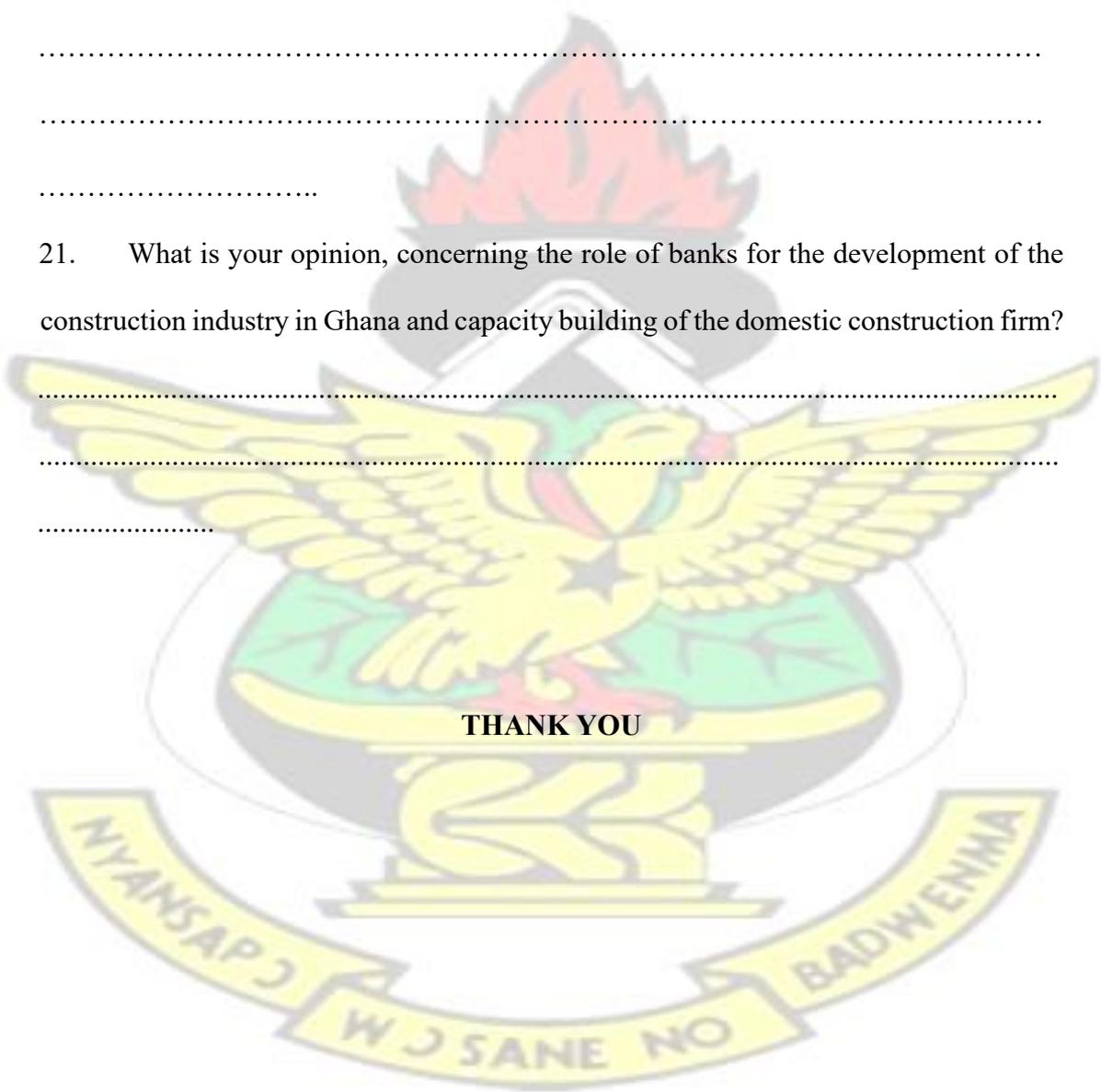
.....insurance or surety
houses.....

20. What do you recommend as a solution for the financial problem of the domestic construction firms?

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21. What is your opinion, concerning the role of banks for the development of the construction industry in Ghana and capacity building of the domestic construction firm?

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THANK YOU