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DEPARTMENT OF BUILDING TECHNOLOGY**

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**AN EVALUATION OF THE IMPORTANCE THAT INSTITUTIONS
ATTACH TO SUPPLIER SELECTION CRITERIA IN PUBLIC
PROCUREMENT PRACTICES IN GHANA**



By

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DECLARATION

I hereby declare that this submission is my own work towards the MSc. award and that, to the best of my knowledge, it contains no material previously published by another person or material which has been accepted for the awards of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

This work is dedicated to the Almighty God for His Grace and Strength in abundance, my family and my supervisor.

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ABSTRACT

Selecting and evaluating the right suppliers is important for organizations' global marketplace competitiveness. The need to improve organisational efficiency, reduce waste, overcome supply chain risk, and achieve competitive position has made companies to start considering appropriate factors for supplier selection and evaluation. To this extent, environmental and sustainability management is playing an increasingly important role in business supply chain management in a dynamic global business environment. Consequently in today's competitive business environment the choice of the best supplier have become a major strategic issue that needs scientific, rational and efficient evaluation criteria. The need for comprehensive criteria and methods that conform to environmental and sustainable concern prompted this study. The study used structured questionnaire to ascertain the importance that public institutions attach to supplier evaluation criteria. The data was analysed using descriptive statistics and scale ranking. The findings revealed that many public institutions rate delivery (4.48), quality (4.48) price (4.27), and warranties claims (4.09) criteria high and important for supplier selection and evaluation relative to the other sustainable criteria for example reusable and recyclable materials which were rated 1.94 and 1.85 respectively. This suggests that the use of these modern business criteria is not yet fully integrated into Ghanaian business practices. This study offers recommendations to public procuring entities and the PPA to review procurement practices to include modern business criteria of environmental and sustainability concerns.

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Thank you.

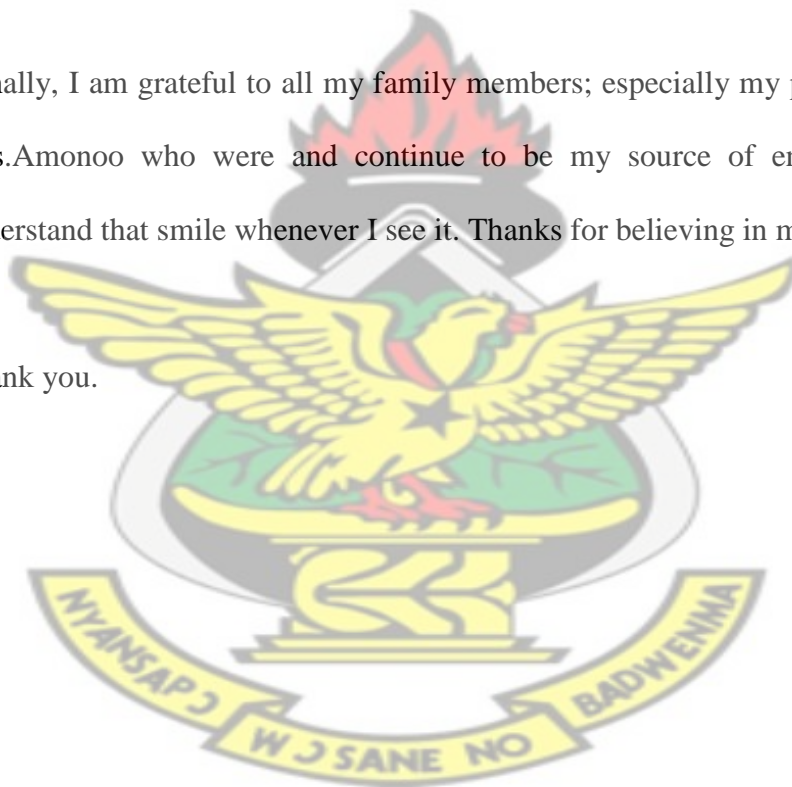


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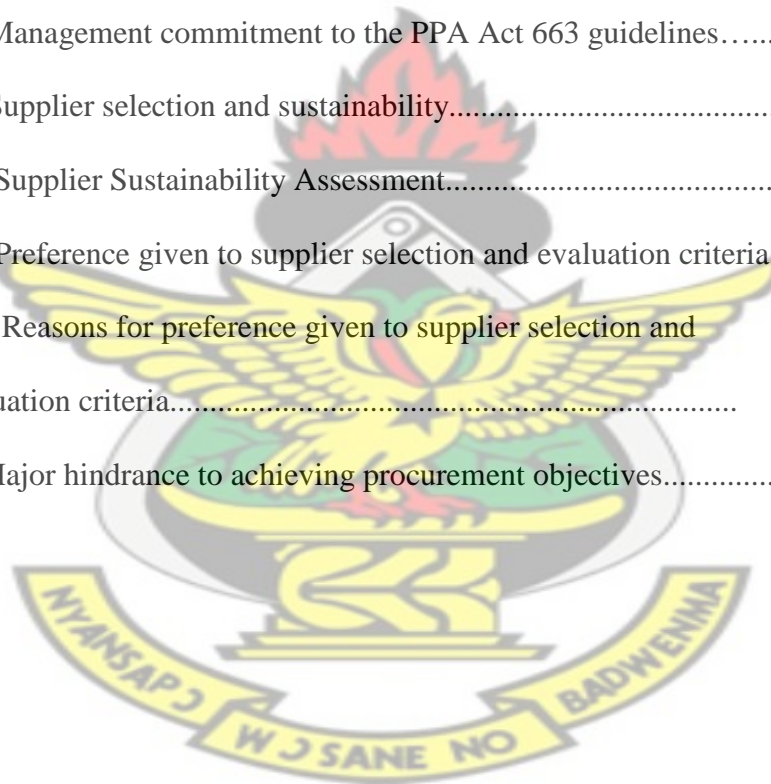
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CHAPTER 1

GENERAL INTRODUCTION

1.0 INTRODUCTION

The chapter looks briefly at the concept of supplier selection in general; focusing on the criteria most organizations consider before making their final contract award, the important roles of suppliers in achieving procurement objectives and a general evaluation of the importance attached to the criteria used for the supplier selection. This chapter also discusses the problem statement of the study, the need for the study and the research questions. The chapter ends with the aims and objectives of the study, the scope of the study and finally the structure of the study, giving the details on how the research work has been organized from chapters 1 to 5.

1.1 BACKGROUND TO THE STUDY

According to (Završnik 1998) the activity that in a sense underlies the realisation of all other objectives of a good purchase decision in procurement is the selection of the supplier. He said even when a buyer might have done his homework in identifying the right product to meet his needs; the achievement of the buyer's objective will ultimately depend on how well his selection of the supplier has been. Thus, the importance of selecting a dependable and reliable supplier is self-evident. He concluded that it is in this context that supplier assessment and evaluation has received great attention in procurement management and the procurement task has become more complex including the need for sourcing for

reliable and dependable suppliers which he said has become more important than even before.

The business dictionary defines a supplier as a party that supplies goods or services. A supplier may be distinguished from a contractor or subcontractor, who commonly adds specialized input to deliverables. This study adopts both sides of the definition, combining a supplier to be a party that supplies goods or services and may add a specialized input to the deliverables and also perform the assignment. Therefore a supplier will mean a contractor/subcontractor, a producer, tenderer or a seller of some items or service. The Australian competition and consumer commission define suppliers as manufacturers, importers, wholesalers, retailers and hire companies who the commission recognises a part the of the supply chain who has a role to play in ensuring products meet safety standards and unsafe goods do not go on the market. Acknowledging the important roles of suppliers, Gary and Reaume (n.d) said, suppliers have roles to ensuring superior quality, cost, service and technology by ensuring that their direct material/service suppliers comply with the requirements of ISO/TS 16949:2002 and adopt the standards of Zero Defects and 100% On Time delivery. Beil (2009) also define supplier selection as the processes by which firms identify, evaluate and contract. Certain of these important roles in the supply chain and the contribution to the economy, (Asamoah et al 2012) agree that in as much as supplier evaluation and selection has become a very important area of consideration for purchasing managers in today's highly competitive environment, organizations stand to reduce costs of the purchasing processes and improve the company's overall competitive advantage when the opportunity to select the right supplier is taken seriously. They therefore advised

that organizations integrate into their core strategic decisions, supplier selection process and evaluation as key activities to help in supplier assessment and evaluation to ensure that the full benefit of suppliers' in the supply chain is achieved. In a study by Rowlinson (1999b) cited by (Miller et al, 2009), they said the primary issue that is often generally raised for example within the construction industry relates to what clients want in order to be satisfied with their buildings and the means by which those buildings have been procured. Consequently, they said it is important to evaluate the clients 'criteria, their importance and then seek performance to match those criteria. All clients require their buildings to be completed on time, within budget and to the highest quality he concluded.

Procurement Guidance material (2009) mentioned that, supplier selection is a complicated decision problem that involves balancing many tradeoffs where any set of criteria must be considered in light of real-life constraints. Confirming the above statement, the United Nations Development Programme (2010) advised that, in selecting suppliers for bid for contracts, the selection method needs to be logical and structured to avoid any criticism or implication of impropriety. According to (SAP 2010) modern procurement organizations are now viewed as key to enabling the organization as a whole in achieving its strategic objectives of cost-cutting, meeting corporate social commitments, and ensuring that strategies are sustainable and can pave the way to the future. Although there continues to be intense pressures on procurement organizations to continue to deliver savings, control costs, and drive operational and process efficiencies, the issues of sustainability and corporate social responsibility continue to grow in importance. The survey said the focus is not only on internal policies but also on ensuring that

suppliers are instituting their own aligned policies for sustainability and social responsibility.

In a recent study of the Ghanaian pharmaceutical industry by (Asamoah et al 2012) on supplier selection criteria for evaluation, it revealed that, regulatory compliance, quality, cost, service, supplier profile and risk were the common criteria most buyers consider before selecting suppliers. Their study discovered that, the 74 articles reviewed show that net price, delivery and quality were discussed in 80%, 59% and 54% of the respectively, and that these three criteria were rated as having extreme or considerable importance. Moreover, production facilities and capability and technical capability criteria were discussed in 31% and 20% of the articles respectively and were also rated as having considerable importance. They concluded that, geographical location was discussed in 22% of the articles and was rated as having average importance too. In Ghana, the PPA Act 663 of 2003 serves as a guide that provides guidelines and procurement procedure for public procurement entities to ensure a judicious, economic and efficient use of state resources ensuring that public procurement is carried out in a fair, transparent and non-discriminatory manner. Among other criteria, the Act 663 states that tenderers/ suppliers possess the necessary professional and technical qualifications and competence; financial resources; equipment and other physical facilities; managerial capability, reliability, experience in the procurement object and reputation; and the personnel to perform the procurement contract(PPA Act 663 of 2003).

Green et al (1996) said green/sustainable supply refers to the way in which innovations in supply chain management and industrial purchasing may be

considered in the context of the environment. They added that, environmental impacts, either actual or potential should be distributed throughout the chain including in design/specification, through tendering, purchasing and distribution, rather than just in production and although the product is in use or being disposed of. Meanwhile, they predicted some level of difficulty for companies striving for environmental improvement in the supply chain in the absence of an environmental management system. However, they suggested such companies begin to integrate environmental criteria into their purchasing policies and procedures which they mentioned involves designing management information systems and supplier assessment procedures which take account of supplier environmental performance and changes in performance over time.

1.2 DEFINITION OF TERMS

- According to Ghana Integrity Initiative (2007), Public Procurement is the acquisition of goods and services at the best possible total cost of ownership, in the right quantity and quality, at the right time, in the right place for the direct benefit or use of government, corporation or individuals, generally via a contract. It can be said to be the purchases of goods, services and public works by government and public institutions. It has both an important effect on the economy and a direct impact on the daily lives of people as it is a way in which public policies are implemented.

Opong (2013) also define public procurement as the process by which large amounts of public funds are utilized by public entities to purchase

goods and services from the private sector. He said it therefore involves the acquisition of goods and/or services at the best possible total cost of ownership, in the right quantity, quality, time and place for use by government and public organizations

- Procurement is the overarching function that describes the activities and processes to acquire goods and services. www.NextLevelPurchasing.com
- Supplier selection is the process by which firms identify, evaluate, and contract (Beil 2009).

1.3 PROBLEM STATEMENT

The Ghanaian Public procurement is directed toward achieving judicious, economic and efficient use of state resources. It is therefore an economic instrument that assures of national development. The main objective of the Public Procurement Act 663 is to harmonize public procurement processes in the public service, secure judicious, economic and efficient use of state resources, ensures fair public procurement, transparent and non-discriminatory and to reduce or eliminate corruption in the procurement process (Public Procurement Act 663, 2003). Despite the important role played by the Procurement Act to ensure that the above is achieved, it appears that the factors set out in the Act for the selection and evaluation of suppliers are not comprehensive enough. The focus for the selection and evaluation is based on the lowest evaluated price and this method exhibit an inherent weakness. In that, the Act ignores current business climate criteria, environmental, waste and all other sustainability issues. Researchers and practitioners have realized that lowest-price is not the promising

approach to attain the overall lowest project cost upon project completion Awal (2003). This research work is therefore an attempt to collect data to examine modern criteria for supplier selection and evaluation that can be adopted by procurement entities to factor in criteria that are of current business environmental issues with globalization and sustainability concerns. This should place Ghanaian companies in a competitive position to compete favourably in an increasingly global competitive market.

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1.4 RESEARCH QUESTIONS

The following questions will be addressed in this research:

1. What are the factors considered in the selection and evaluation of suppliers that help achieve public procurement objectives?
2. What leads to the preference for one criterion for supplier selection to the other?
3. What constitute comprehensive criteria that align with modern business conditions of globalization and sustainability?

1.5 AIM AND OBJECTIVES

The aim of the study is to identify the comprehensive criteria that align with modern business climate and the importance buyers attached to the evaluation criteria for supplier selection and evaluation.

The objectives of the study will be as follows:

1. To identify the factors considered in the selecting and evaluating of suppliers that help achieve public procurement objectives
2. To ascertain the weight/importance placed on the various factors use for supplier selection and evaluation.
3. To identify other comprehensive criteria considered in modern business climate use for supplier selection and evaluation.

1.6 JUSTIFICATION FOR THE STUDY

In order to ensure regulated procedures in the Ghanaian public procurement process, the Public Procurement Act, Act 663 of 2003 was established to make administration and institutional arrangement for proper procurement. Although the Act has some criteria to be followed by the public entities, these criteria are not comprehensive enough to consider current business climate conditions where environment and sustainability issues are at the heart of many governments and businesses. Issues of the environment and society concerning recyclable and reusable materials are total ignore while much concentration is given to the economical benefits where the least evaluated supplier is awarded the contract. It is this inherent weakness of lack of comprehensive modern business criteria in

the Act 663 of 2003 that this study is important to be able to unearth modern business criteria to achieve procurement objective that considers in whole, the environment, society and the economy objective.

This study additionally provides to policy makers and other interested individual information on comprehensive factors for supplier selection and evaluation that align with modern business climate. Finally, the study creates a document that could be useful to individuals who will undertake research on supplier selection and evaluation and the Public Procurement Act.

1.7 SCOPE OF STUDY

This research was conducted in the Greater Accra and Tema regions. These two Regions were chosen because major public procurement activities are undertaken in the capital and the selection can fairly represent public entities in the country. The study contextually looked at the concept of supplier selection and evaluation in the public sector and the importance attached to the factors for the selection and evaluation.

1.8 ORGANISATION OF THE STUDY

The research has been grouped into five chapters. The first chapter provides background information to the study which includes introduction, problem statement, research questions, aim and objectives, justification and scope of the study. Literature on the concept of supplier selection and evaluation and its

related factors were reviewed in chapter two. The chapter three which is the methodology of the study which looked at the Research design, population, sample and sampling procedure, sources of data, data collection instruments and data analyzes. Chapter four analysed and discussed the data gathered and chapter five presents a summary of the findings, conclusion and recommendations of the study.

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1.9 SUMMARY

This first chapter of the study looked briefly at the background to the study, reviewing the important roles of suppliers and their impact on the economy, the criteria most buyers consider before selecting their suppliers and the importance of undertaking the exercise of selecting among many suppliers. The chapter in detail also discussed the problem statement, giving the reason underlying the need for the study. The research questions, aim and objectives were all stated. Considering the fact that most businesses have moved to a more modern way of doing business with the environment and society in mind, the chapter commented on comprehensive modern business criteria lacking in the PPA Act 663 of 2003 (which is the guideline for public procurement in Ghana), to justify the need for the study. Finally, the study's scope and organization were considered in the chapter.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter primarily seeks to find out what other authors have done in regard to this subject matter. It extensively reviews journals, articles, reports, published and unpublished materials and conference papers among others with regards to the importance institutions attach to the criteria for supplier selection and evaluation criteria. The importance attached to these selections and evaluation criteria cannot be over emphasised. According to (Beil 2009), to avoid the dire outcomes of supplier non-performance, buyers typically must take proactive steps to verify a supplier's qualifications prior to awarding them a contract. Additionally, he mentioned that, primary goal of "supplier qualification screening" is to reduce the likelihood of supplier non-performance, such as late delivery, non-delivery, or delivery of non-conforming (faulty) goods. The chapter therefore looks critically at the concept of supplier selection, the importance attached to the criteria for supplier selection and evaluation, and the comprehensiveness of the criteria. The chapter also looks at the business environment of Ghana, a review of the PPA Act 663's criteria for supplier selection and finally literatures on the need and importance of supplier sustainability will be reviewed.

2.1 CONCEPT OF SUPPLIER SELECTION

According to Enyinda et al (2010), selecting and evaluating the right suppliers is the quintessential aspect of strategic purchasing and supply chain management that can affect manufacturing firms. They mentioned that the selection process

entails the evaluation of different alternative suppliers based on a multi-attribute decision making problem which is affected by different tangible and intangible attributes such as the traditional attributes, quality, and cost, service, flexibility, and delivery performance. According to (Asamoah et al, 2012 in Tahriri et al. 2008), supplier evaluation and selection has become a very important area of consideration for purchasing managers in today's highly competitive environment). They explained that, because the cost of raw materials purchased for production usually constitute a higher percentage of the total cost of finished products; it has become increasingly necessary for organizations to get the best value for money from suppliers. Additionally, they also said, suppliers are critical resources for manufacturing firms because firms spend up to 70% of their total expenditure on suppliers for the procurement of necessary raw materials. In light of this, they concluded that, supplier evaluation and selection process which represents one of the most important activities of organizations must be incorporated into their core strategic decisions. To this effect (Enyinda et al 2010) said improper selection and evaluation of potential suppliers can dwarf an organization's supply chain performance. Adding that, selecting and evaluating the right suppliers is imperative for an organization's global marketplace competitiveness and that with strategic partnership with suppliers integrated within the supply chain waste and costs can be eliminated, improve quality and flexibility to meet end-customers' value expectation. Gallego (2011) concludes that in as much as supplier selection approach is changing because of evolvement of market requirements, procurement department also prefer a multi-supplier strategy aside the traditional price attribute. She claims the multi-supplier strategy assigns not more than 15% to 25% of the purchase orders to the same supplier

thereby providing the company more negotiating power and protecting the company against sudden price increases, or modifications in the delivery time.

2.2 CRITERIA FOR SUPPLIER SELECTION AND EVALUATION

According to Cheraghi et al (n.d) effective supplier evaluation and purchasing processes are critical success factors for many organizations, in that, the absence of an effective measure for the supplier selection problem can directly and substantially affect costs and quality. They added that in practice, any set of criteria must be considered in light of real-life constraints, making the supplier selection a complicated decision problem that involves balancing many tradeoffs and satisfying conflicting issues. The Oxford dictionary defines criteria as principle or standard by which something may be judged or decided.

In identifying some of the criteria many organizations consider in their supplier selection and evaluation, (Frost & Long 2000) mentioned that, whilst some studies have shown there is some variation in the criteria used across different purchase situations and product types, in general the four most important criteria are delivery, price, quality (product) and service.

Asamoah et al (2012) mentioned one significant study by Dickson in 1966 that considered multi-objective nature of vendor selection. They explained that the study was based on a questionnaire sent to 273 purchasing agents and managers selected from the membership list of the National Association of Purchasing Managers, which included agents and managers from the United States and Canada. Dickson's study describes the importance of 23 criteria for supplier

selection which were classified with respect to their importance observed in the beginning of the sixties. At that time (1966), the most significant criteria were quality of the product, the on-time delivery, the performance history of the supplier and the warranty policy used by the supplier. The details of the 23 criteria and the importance placed on each criterion by the purchasing agents are shown in the table 1.0 below.

Number	Factor	Mean	Relative Importance
1	Quality	3.508	Extreme Importance
2	Delivery	3.417	Considerable Importance
3	Performance History	2.998	
4	Warranties & Claims Policies	2.849	
5	Production Facilities and Capacity	2.775	
6	Price	2.758	
7	Technical Capacity	2.545	
8	Financial Position	2.514	
9	Procedural Compliance	2.488	
10	Communication System	2.426	
11	Reputation and Position in Industry	2.412	
12	Desire for Business	2.256	
13	Management and Organization	2.216	
14	Operating Services	2.211	
15	Repair Services	2.187	
16	Attitude	2.120	
17	Impression	2.054	
18	Packing Ability	2.009	
19	Labour Relations Record	2.003	
20	Geographical Location	1.872	
21	Amount of Past Business	1.597	
22	Training Aids	1.537	
23	Reciprocal Arrangements	0.610	Slight Importance

Aggregate Factor Ratings (Dickson, 1966)

Giving details of Dickson (1996) study, Frost & Long (2000) said the study surveyed purchasers in order to identify the factors they considered important when awarding business to competing suppliers. They said in different situations, some supplier selection criteria did vary however quality, on-time delivery and supplier performance history were the three common criteria that were considered important regardless of the situation. In spite of the fact that, Dickson (1996) study has been some many years ago, ten years on (Perrealt and Russ 1976) confirmed in their study that the physical distribution service criterion, which is satisfactorily delivered goods, was rated second to product quality when influencing industrial purchasing decisions. They also said delivery was rated above price and the quality of supplier management. Gallego (2011) agreeing with (Frost & Long 2000) on Dickson's study said, the majority of research about supplier selection problem mentions Dickson's study making his identified criteria relevant even in this current times for consideration when selecting and evaluating the supplier. Enyinda et al (2010) testify that, supplier selection is a multi-attribute problem that considers both qualitative and quantitative variables. Their study concluded that regulatory compliance is the best supplier selection criterion, followed by quality, risk, cost, supplier profile, and service.

Also confirming the most common factors for supplier selection some year ago and in recent times, is a study by (Thanaraksakul and Phruksaphanrat 2009) which revealed quality, delivery, and cost as the most considered criteria with percentages over 90. They mentioned that, quality, delivery, cost, production facility and capability, technical capability and support, and financial criteria are significant basic criteria generally used for last forty years. Additionally in the

same way, they mentioned also that flexibility and reciprocal arrangement criterion has massively increased significantly. According to Cheraghi et al (n.d) from a decision support system perspective, the research on the supplier selection problem can be divided into two parts. First, a multi-attribute decision making models that give grades to suppliers on a set of criteria, and then use a weighting scheme to arrive at a supplier score. Second, mathematical programming techniques that model the constraints and an objective function to select the optimal supplier. The grading method is easy and intuitive but remains simplistic in that it does not consider any constraints explicitly. On the other hand, mathematical programming methods accommodate both constraints and supplier selection criteria, but must make restrictive assumptions to reduce inordinate complexity. As such, supplier selection criteria according to them play an integral role in both approaches. They also pointed out that, it is right and appropriate to conclude that supplier selection criteria will continue to change based on an expanded definition of excellence to include traditional aspects of performance (quality, delivery, price, service) in addition to non-traditional, evolving ones (JIT communication, process improvement, supply chain management).

As much as more and more environmental protection regulations are issued, and more intense public awareness of environmental protection are being encouraged, Peng (2012) suggests that, today's enterprises lay more emphasis on environmental issues to survive in the global market. She adds that environmental management is playing an increasingly important role in business management, hence, how to choose the best green supplier is the company's major strategic issue that needs scientific, rational and efficient selection criteria and methods. She recalled an evaluation indexes studies by Handheld, et al.(1997), Lee et

al.(2009), Hoek(1999), Zhu et al.(2007), and Liu et al.(2005) which presented results focused on the green supplier evaluation and selection of green suppliers that revealed that the main consideration of green supplier selection are product quality, price, delivery lead time, and environmental capacity. She said among other things, the researchers suggested that enterprises should evaluate and select green suppliers on the basis of product life cycle assessment. She believes the selection of green supplier is a key step in green supply chain management and the rational choice of green suppliers is very important in enhancing the competitiveness of enterprises, resource conservation and environmental protection.

2.3 THE BUSINESS ENVIRONMENT IN GHANA

Business environment is defined by (Collier 2000 in a study by Eifert and Gelb 2005) as the body of policies, institutions, physical infrastructure, human resources, and geographic features that influence the efficiency with which different firms and industries operate. He said, at firm level, business environment directly influences costs of production; at the industry level, which often relates to market structure and competition and its impact is felt more heavily in traded sectors that are not particularly intensive in natural resources than in primary production and extractive resource sectors. He explained that, the former tend to more intensively require “inputs” of logistics, infrastructure, and regulation.

Also commenting on the business environment, (Steel and Webster 1991) mentioned regulations as being an important aspect of the business environment

that represent the most direct expression of the government's attitude toward business by the restrictions and or the need for approval by the government for business operation. In addition they said although taxes normally can be considered with other determinants of profit and loss, they are included here in the regulatory Framework because they have become intertwined with regulations: Tax Clearance Certificates (TCCs) are required to carry out virtually all business activities subject to regulation, such as importing, exporting, registering vehicles, and even obtaining visas. Porter and Kramer (2011) also believe that regulators would accomplish much more by focusing on measuring environmental performance and introducing standards, phase-in periods, and support for technology that would promote innovation, improve the environment, and increase competitiveness simultaneously. Hence, they concluded that, regulation is necessary for well- functioning markets. In their study of small enterprises under adjustment in Ghana, (Steel and Webster 1991) said firm owners that were given the opportunity to state the foremost problem affecting their business and then a list of up to three others, 23 percent of the firms surveyed stated lack of credit for raw materials as the single most serious problem, lack of demand is the biggest problem for 17 percent of firms, followed by lack of credit for equipment (11 percent), high price of local raw materials (7 percent), too many other firms in the same business (6 percent), and lack of local raw materials (6 percent). Lack of credit is the largest problem for small firms, whereas microenterprises see lack of demand as a more important problem than lack of credit. Medium/large firms cite the high price of imported raw materials as their biggest problem. Although they are more able to get credit to cope with this problem, they are less able to pass on the increased cost, presumably because

of import competition and depressed demand. However, they mentioned that, the overall business environment has generally improved during the adjustment program, although many shortcomings remain. For instance they said while government is widely seen as favouring greater private investment, many entrepreneurs remain wary of arbitrary government interference, such as shutting some firms down or forcing small enterprises to relocate. Political and economic stability and lack of finance were some other business challenges they mentioned as having immediate restraints on investment in Ghana. However, they believe that improving the tax collection system by lowering rates and reducing the restrictiveness of Tax Clearance Certificates would facilitate the operation of medium- and large-scale firms.

Nevertheless, Akoma Trade (GH) Ltd. (n.d) noted that, companies worldwide would like to conduct business with Ghana, but the challenges most businesses face are a lack of resources and inexperience in locating verified suppliers and their products in Ghana.

Notwithstanding these business challenges in Ghana, Asamoah et al (2012) mentioned that, there is an opportunity for organizations to integrate into their core strategic decisions supplier selection process and evaluation as key activities which will help organizations to reduce costs of the purchasing processes and improve the company's overall competitive advantage.

According to (Eifert and Gelb 2005) though a combination of macroeconomic instability, crime and poor security, a weak and politicized financial system, shoddy local roads and electricity systems, high transport costs, and predatory local officials will have relatively little influence on large-scale industries they

will be devastating for small-scale and medium-scale manufacturing. Regardless of all these however, they believe that, business environments do not have to be perfect, but they have to be good enough on a number of crucial dimensions to stimulate investment and competition sufficient to launch the self-reinforcing process of industrial growth, not to drive out efficient firms which are able to transform inputs into outputs with high efficiency and low “factory-floor” costs.

2.3.1 Review of Procurement practices in Ghana

Oppong (2013) define public procurement as the process by which large amounts of public funds are utilized by public entities to purchase goods and services from the private sector. He said it involves the acquisition of goods and/or services at the best possible total cost of ownership, in the right quantity, quality, time and place for use by government and public organizations .Recalling the large amount involve in this kind of procurement, he mentioned a former Finance Minister of Ghana, Dr. Kwabena Duffuor who stated in public forum organized by the Public Procurement Authority (PPA), that “public procurement in Ghana utilized about 80 per cent of national tax revenue that represented about 24 per cent of total imports”. That figure also represented between 50 and 70 percent of the national budget accounting for 17 percent of the country’s GDP. The public procurement sector is often the largest domestic market in less developed countries he continued and said that was due to the inadequacy of public procurement procedures. In the public sector there is an international trend to contestability and market approach in the delivery of public services, mainly with reference to network services. The underlying foundation of this trend is that

competition would result in improved outcomes such as greater efficiency, higher quality of service, a clearer focus on customers and better value for money (Larbi, 1998). Adding to public procurement potential, (Osei-Afoakwa 2012) said, the expectation of every public procurement system, law, policy, regulation, etc, designed to ensure integrity and corruption prevention is that it ensures transparency. Hence, he advised that a conscious effort is made in the promulgation of every public procurement law to make provisions that will ensure that procurement processes and systems are transparent.

The Public Procurement Authority in its review in 2006 identified the weakness in the public institutions that need urgent attention. These according to Osei-tutu et al (2011) were identified as: Lack of qualified procurement personnel, incorrect interpretation and application of some provisions of the procurement Act, slow pace in regularizing the Draft Regulations, lack of clear procedures for Emergency Procurement, lack of Training Avenues or Institutions, poor Record Management (scattered files), poor handling of Suppliers' Complaints, poor Procurement Planning, Mobilization & Implementation, poor Contract Management and high cost of Advertisement (PPA, 2007).

2.3.2 Review of PPA Act 663 of 2003 Criteria for supplier selection

The PPA Act 663 of 2003 provides guidelines for public procurement which establishes the Public Procurement Board that makes administrative and institutional arrangements for procurement. The objective of the Board is to harmonise the processes of public procurement in the public service to secure a judicious, economic and efficient use of state resources and ensure that public

procurement is carried out in a fair, transparent and non-discriminatory manner.
(PPA Act 663 of 2003)

The Act 663 sections 22, 23 and 24 give the following as the criteria that qualify suppliers for a possible contract award. According to the Act, tenderers shall possess or do the following to be qualified for the award.

(1)

(a) possess the necessary

(i) professional and technical qualifications and competence;

(ii) financial resources;

(iii) equipment and other physical facilities;

(iv) managerial capability, reliability, experience in the procurement object and reputation; and

(v) the personnel to perform the procurement contract;

(b) have the legal capacity to enter the contract;

(c) be solvent, not be in receivership, bankrupt or in the process of being

(f) meet such other criteria as the procurement entity considers appropriate etc

(2) The procurement entity may require tenderers to provide appropriate documentary evidence or other information that it considers useful to satisfy itself that the tenderers are qualified in accordance with the criteria referred to in subsection (1).

(3) Any requirement established pursuant to this section stated in the tender documents or other documents for invitation of proposals shall apply equally to the tenderers.

(4) The procurement entity shall evaluate the qualifications of candidates in accordance with the criteria and procedures stated in the documents referred to in subsection (3).

(5) The procurement entity shall disqualify a tenderer who submits a document containing false information for purposes of qualification.

(6) The procurement entity may disqualify a candidate if it finds at any time that the information submitted concerning the qualifications of the candidate was materially inaccurate or materially incomplete.etc

The Act again spells out the prequalification proceedings as follows:

Pre-qualification is based upon the capability and resources of prospective tenderers to perform the particular contract satisfactorily, taking into account the tenderers:

- *experience and past performance on similar contracts;*
- *capabilities with respect to personnel, equipment, and construction or*
- *manufacturing facilities;*
- *required licensing and professional registrations; and*
- *commercial and financial resources.*

Procurement Act, Act 663 of 2003 also states that procuring entities shall award the Contract to the successful tenderer whose Tender has been determined to be substantially responsive and has been determined as the lowest-evaluated (Tender PPA Act 663).

2.4 THE NEED FOR SUSTAINABILITY IN SUPPLIER SELECTION

According to the Hera Group (2010), sustainable supplier selection is base on evaluating the quality and economic viability of services, technical and professional qualifications, respect for the environment and a high degree of social commitment, in compliance with rules prescribed by the relative standards and procedures. The Chattered Institute of Purchasing and Supply, CIPS (2004)

also explains that, sustainable procurement looks into what products are made of, where they come from and who has made them. It said it is even about looking at whether there is the need to make the purchase at all and the factors to be considered to make better choices and achieve the best overall value for money on a whole-life and long-term basis. It added that, ensuring sustainable procurement helps gain positive customer perception, improved availability of resources, energy savings, more efficient supplier relationships, identification of alternative supply chain solutions, safer greener technologies and materials supplier management among other factors. It concludes that if sustainable project features are made a priority in a project's earliest stages, it is widely held that these features will not have to add to the project's overall cost. The International Journal of Economics and Management Sciences as cited in (Kalubanga 2012) advised procuring organizations and other supply chain partners who are more seriously involved in designing and implementing sustainable procurement policies to focus on how environmental issues and issues relating to other aspects of the sustainable development pillars (Society and Economy) can be integrated in the procurement process activities. The report noted that, there are a number of drivers for increasing prominence of sustainability including an increased understanding of the science relating to climate change, pressure from various stakeholders upon the organisations for the implications of their activities, and greater transparency concerning both environmental and the social actions of organisation. Having observed the importance and benefits of making sustainable issues a part of the Ghanaian procurement process, a former Chief Executive Officer of the Public Procurement Authority, Adjei (2008) proposes that Ghana shift from its current public procurement practices to embrace modern sustainable

public procurement practices where issues of the environment are considered in the public procurement practices. He added that the advantage among other things will be a procurement system that is focused not mainly on the immediate economic advantage but also environmental and societal benefits which helps to globally place the country in the competitive market, improve the available resources, make great energy savings etc. Furthermore, he advised that since buyers in general have a lot of control over what is manufactured and how it is manufactured, buyers should desist from buying from companies that are ethically irresponsible, saying that, if buyers purchase from companies that exploits their workers or degrade the environment through their operations, then it will be an act of encouragement for those companies to continue with their bad practices. The United Nations Office for Project Services, UNOPS (2009) in agreement with the above advised procurers and requisitioners to be flexible enough to have intermediate alternative proposals, using only some of the green label criteria or choosing to use criteria from a single issue label focusing on one adverse environmental impact. In so doing procuring entities must incorporate extrinsic cost, social and environmental factors into decisions alongside the conventional procurement criteria of price and quality. The UNOPS concludes that, it is important that purchasing decisions incorporate whole life cost and give consideration to the associated risks and implications for society and the environment.

2.5 SUMMARY

The chapter discussed the concept of supplier selection establishing that right supplier selection is needed for strategic purchasing and supply chain management in firms especially the manufacturing ones. The traditional criteria most organizations use for supplier selection and evaluation are; price/cost, quality, delivery, performance etc. However, in this current business environment, other organization/economies are considering sustainable and environmental factors to include green label focusing, whole life cost consideration, risks etc. The chapter also looked at the business environment in Ghana, where regulations and taxes play a major role and the fear of political and economical stability present challenges to potential investors. The literature also reviewed that public procurement in Ghana takes about 80% of the national tax revenue, an indication that a lot of public procurement is carried out in Ghana. It is therefore the expectation that policies, regulations and laws governing public procurement will eliminate any weakness in the system since much is spent on it. The only guide to public procurement in Ghana- the PPA Act 663 of 2003 was also reviewed showing the various criteria for suppliers' evaluation and selection. These criteria stated by the Act 663 according to the literatures reviewed are not comprehensive enough, they lack consideration for environmental and sustainability issues which are the emerging criteria for supplier evaluation in modern businesses. Considering the fact that environmental and sustainability management is playing an increasingly important role in this dynamic global business environment which is catching up fast on every economy, the choice of the best evaluation criteria leading to the selection of the best supplier has become a major strategic issue that needs scientific, rational, efficient and green

supply chain management measures. The time has come for evaluation criteria for suppliers to consider competitiveness of organizations, resource conservation and environmental protection with continuous process improvement and just-in-time principles in this increasingly competitive business environment.

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CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.0 INTRODUCTION

The chapter gives the strategies employed in carrying out the research work. It discusses the research design and sample type, giving details of the sources for both the primary and secondary data. The chapter also defines the scope of the study and how data was collected and analysed.

3.1 RESEARCH DESIGN AND SAMPLE TYPE

The research is a descriptive study which considered the evaluation of the importance that institutions attach to supplier selection criteria in the Ghanaian public procurement sector. Descriptive study according to (Oppong 2013) is to gather information about the present existing condition with the aim of obtaining an accurate profile of the people, events or situations. This method was adapted to be able to gather primary data from respondents.

To achieve the quality of respondents required for the study, a Purposive random sampling technique was employed. This sampling method helped in this kind of study where the respondents are known. It allowed for direct contact with respondents without delays on gathering data, the method also allowed all members of the population to have an equal chance of becoming a respondent. According to (Osei – Owusu and Gyapong 2013) this method of sampling, allows

the researcher to get information from a target group who are ready to provide information in certain criteria designed by the researcher.

Thirty-three (33) respondents out of a total of the 60 questionnaires distributed were successfully completed and returned. These respondents were randomly chosen from Greater Accra and Tema Regions of Ghana.

3.2 DATA SOURCE

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Data collection was done through both secondary and primary sources. The primary data sources were questionnaires distributed to public entities. The departmental heads and persons in these organisations' procurement departments completed the questionnaire. The secondary data were other literatures reviewed from sources which were mainly organizations/institution reports, journal, published and non published publications, annual reports of companies, research works, websites, books, articles and as well the PPA act 663.

3.2.1 PRIMARY DATA

The primary data was collected through administered structured questionnaire by on-hand. The reviewed literatures helped to design the questionnaire that enable data to be collected on criteria use for supplier evaluation and the importance attached to these criteria. The questionnaire was divided into two main sections: general information on job titles, organizational activities, experiences etc. The second part of the questionnaire explored the knowledge and understanding of

employees on the of public procurement processes. The Likert methodology was adopted in this study, since it allowed respondents to choose answers that represent the degree of agreement or disagreement to the various questions. Questionnaires were also pre-tested to gauge the level of understanding and to eliminate ambiguities in any of the questions. Drawing reference from Dickson`s (1966) 23 criteria (Chapter 2, section 2.2), the study questionnaire design considered those criteria with other emerging environmental and sustainable business criteria as revealed by the various literatures. The structured questionnaire was designed to take about 10 to 15 minutes to complete (see Appendix A). The questionnaire distribution and data collection took between 4-6 weeks.

3.2.2 SECONDARY DATA

Other researchers` works were reviewed which helped to design the questionnaire that enable the primary data to be collected on the evaluation criteria for supplier selection and the importance attached to those criteria. Literatures from institutions reports, journals, published and non published publications, annual reports of companies, research works, websites, books, articles and as well the PPA act 663 were the main source for the secondary data collected.

3.3 DATA ANALYSIS AND INTERPRETATION

The data was analyzed using descriptive statistics and scale ranking, Statistical Package for the Social Sciences (SPSS). Total responses for each item on the questionnaire were obtained and tabulated. In order to use the Likert-scale for interpretation, weighted mean was used to represent each question computed. Furthermore, to determine how concentrated the data were around the mean, standard deviation for each criterion was ascertained. The results of the data were presented in tables.

3.4 SUMMARY

This chapter presented an account of the research strategy and methodology used to conduct the research work. The methodology for this study was carried out systematically; structured questionnaire was adopted to collect the needed primary data, while other researchers' work- journals, institutions reports and publications offered the secondary data. Purposive sampling of the population was employed which allowed the right respondents to be directly contacted. SPSS helped to analyse the collected data which aided in the achievement the study's objectives.

CHAPTER FOUR

ANALYSIS AND DISCUSSIONS

4.1 INTRODUCTION

The empirical evidence on data gathered on the importance attached to the evaluation criteria for supplier selection in the Ghanaian public sector is presented in this chapter. The chapter highlights the descriptive data of the selected factors presenting the frequency and percentage of each factor as an analysis to the response gathered from the questionnaire. The chapter ends with a discussion of the findings that offers an interpretation to the collected data.

4.2 ANALYSIS OF QUESTIONNAIRE

Out of the 60 questionnaire distributed to the public procurement entities in the Greater Accra and Tema regions of Ghana, 33 of the questionnaire were fully completed and returned. The responses to the questionnaire were analysed as follows:

4.1.1 Respondents Job Title

Table 4.1 Shows response to question 1. The questionnaire was designed to be answered by respondents who are procurement professionals with experience in the Ghanaian public sector involve in supplier selection and evaluation. This target was achieved from the statistics presented in Table 4.1 below as 78.7% of the respondents were involved in procurement.

	Frequency	Percent
Procurement Officer	22	66.6
Finance officer	3	9.1
Administrative Director	4	12.1
Procurement Director	4	12.1

The study had 33 respondents from public institutions in the Greater Accra and Tema regions responding to the questionnaire sent to them. Out of this figure, 66.6% (22) were procurement officers, constituting the largest group in the sample. This presents a fair representation of the population under study since the study target was the procurement personals. Finance officers also constituted 9.1% (3) of the sample. Procurement directors and administrative directors constituted 12.1% (4) each.

4.1.2 Experience of respondents

Table 4.2 Shows response to question 2. All the 33 respondents have been involved in the procurement process of their various organizations within the past 10 years. Out of this, 25, constituting 75.8% were involved within the period of 1-5 years and 8, representing 24.2% engaged in the process within the past 6-10 years. Thus, the respondents are experienced and basically have a fair idea about the subject under discussion. It can be deduced therefore that the sample provides a realistic summary of the general practice involve in the selection and evaluation of suppliers in the Ghanaian public sector.

	Frequency	Percent
1-5 years	25	75.8
6-10 years	8	24.2

4.1.3 Activities of the organization sampled

Table 4.3 shows response to question 3. The research covered a broad area of the public sector activities ranging from health (21.2%), education and/or research (18.2%), social affairs/employment (15.2%), construction (3.0%) economic affairs (18.2%) and general public services (24.2%). In general, the sample can be said to be representative of the Ghanaian Public Sector of varied institutional activities.

	Frequency	Percent
Health	7	21.2
Education and/or research	6	18.2
Social affairs/employment	5	15.2
Construction	1	3.0
Economic affair	6	18.2
General public services	8	24.2

4.1.4 Organization's strategic supply

Table 4.4 shows response to question 4. A multiple response question was posed to respondents to determine their organization's strategic supply strategies. They

were to indicate the level of their agreement to the statements. Most of the respondents believe that they rely on large number of suppliers hence 23(69.7%) strongly disagree to the statement ‘we rely on small number of suppliers’. Further, it is evident that, most institutions get multiple quotations from suppliers before ordering, which was represented by 25(75.6%) of the respondents. Additionally, 6(18.2%) just agree and 2(6.1%) of the institutions strongly disagree to the statement on getting multiple quotations before ordering. More so, it is revealed that a fair number of the institutions ‘exchange performance feedback with their suppliers’. Thus, 10(30.3%) and 16(48.5%) of the respondents ‘strongly agree’ and ‘agree’ to the statement respectively, while 7(21.2%) of the respondents do not exchange performance feedback with their suppliers.

	Strongly agree	Agree	Strongly disagree
We rely on small number of suppliers	4(12.1%)	6(18.2%)	23(69.7%)
We get multiple quotations from suppliers before ordering	25(75.6%)	6(18.2%)	2(6.1%)
We exchange performance feedback with our suppliers.	10(30.3%)	16(48.5%)	7(21.2%)

4.1.5 Assistance of the PPA (Act 663, 2003) in achieving supplier selection and evaluation objectives

Table 4.5 shows response to question 7. It was revealed that the PPA Act 663 of 2003 is helpful to the public institutions in achieving their supplier selection and evaluation objectives. All 33(100%) respondents responded ‘yes’ to the question

“ has the PPA Act 663 helped your organization to achieve its supplier selection and evaluation objectives?” Indicating that, respondents are absolutely satisfied with the Public Procurement Act 2003 (Act 663) in its selection and evaluation criteria for suppliers.

	Frequency	Percent
Yes	33	100.0

4.1.6 Management commitment to the PPA Act 663 guidelines

Table 4.6 shows response to question 8 which is a respond to a multiple question posed to respondents to determine management’s commitment to the PPA Act 663 guidelines in their procurement processes. There was some level of agreement from respondents that management comply with the PPA Act 663 guidelines. Generally, from respondents’ response to the three statements below, there was the indication that top management commit to the guidelines of the Act

Management commitment	Strongly agree	Agree	Strongly disagree
Top management advocates for Judicious, economic and efficient use of state resources	18(54.5%)	9(27.3%)	6(18.2%)
Top management advocates for Integration of fairness and transparency in supplier selection and evaluation process	13(39.4%)	17(51.5%)	3(9.1%)
Top management advocates for Compliance with the PPA Act 663	23(69.7%)	10(30.3%)	

but there is the need to enhance this commitment.

4.1.7 Supplier selection and sustainability

Table 4.7 shows response to question 9, another multiple response questionnaire administered to respondents to ascertain supplier selection and sustainability. It is encouraging to note that most of the institutions encourage suppliers to be more sustainable. Thus, 48.5% 'strongly agree' and 42.4% 'agree' to the statement. Also, cost, quality and timely delivery are considered prior to other sustainability criteria by most of the respondents. For example, 18(54.5%) and 10(30.3%) 'Strongly agree' and 'agree' respectively to the statement that " Cost, quality and timely delivery play more important role than other sustainable criteria". On the other hand, 5(15.2%) thought otherwise. On the issue of switching to more sustainable suppliers, most institutions 21(63.6%) agree that they consider this option. Again, quite a number, 8(24.2%), do not take this issue of sustainability into consideration at all in the procurement process. In relation to this, 17(51.5%) think that it is difficult to ask current suppliers to be sustainable. On environmental protection issues, it is surprising that most of the institutions seem to be unconcerned in this regard. For example, 17(51.5%) do not set any environmental criteria at all for their suppliers to meet.

Statements	Strongly agree	Agree	Strongly disagree
We encourage existing suppliers to be more sustainable	16(48.5%)	14(42.4%)	3(9.1%)
Cost, quality and timely delivery play more important role than other sustainable criteria	18(54.5%)	10(30.3%)	5(15.2%)
We actively consider switching to more sustainable suppliers	4(12.1%)	21(63.6%)	8(24.2%)
It is difficult to ask current suppliers to be more sustainable	3(9.1%)	13(39.4%)	17(51.5%)
We set environmental criteria that suppliers have to meet	3(9.1%)	13(39.4%)	17(51.5%)
Sustainability plays important role in our search for suppliers	10(30.3%)	11(33.3%)	12(36.4%)
We try to replace where possible less sustainable suppliers with a more sustainable one.	6(18.2%)	18(54.5%)	9(27.3%)

4.1.8 Supplier Sustainability Assessment

Table 4.8 shows response to question 10, which was a question administered to establish the availability of supplier sustainability assessment program in the various institutions. It revealed the poor level of importance attached to supplier sustainability in the various public institutions. As many as 26(78.8%) did not have any supplier sustainability assessment system in place.

	Frequency	Percent
Yes	7	21.2
No	26	78.8

4.1.9 Preference given to supplier selection and evaluation criteria

Table 4.9 shows response to question 11. This question containing 29 items on preference given to selection criteria in supplier selection and evaluation was administered to respondents. The items were phrased so that strong agreement indicates a measure that respondent attached high importance to the measured item and vice versa. Participants responded to the items using a 5-point Likert scale ranging from 1 (“Not important”) to 5 (“Highly important”). A Mean was calculated for each statement for purposes of comparisons and the standard deviation was calculated to determine how concentrated the values were from the mean. The standard deviation calculated helped to ascertain how more or less a criterion was variable from the other considering the fact that, every criterion has a specific importance to achieve. The calculated standard deviation also provided an indication of how far each criteria deviate from the mean. An overall average rating of the statements were measured for general preference measurement, summary preference indicator value were as follows; 1- Not important, 2 – Less important, 3 – Important, 4 – Very important, and 5 – Highly important.

From the table, the picture which emerged from the mean ratings obtained suggests that there is a moderate level of preference given to the selection criteria since overall approval rating is **3.28** (moderate). The ratings ranged from as low as 1.85 (close to low) for recyclable materials to as high as 4.48 (close to high) for both quality and delivery as factors considered in supplier selection and evaluation and the importance attached. This implies that, most of the respondents do not consider recyclable materials which in fact are one of the emerging criteria in supply chain management before giving orders. This has dire consequences on the environmental. They however take into serious consideration the quality of work and the delivery capacity of the supplier.

Other factors rated highly by respondents include; financial position (4.33), price (4.27), technical capacities (4.15), warranties and claims policies (4.09), complying with national regulations (4.06) and performance history (4.0). Other factors lowly rated include; reusable materials (1.94), reciprocal arrangement (2.48), geographical location (2.36), labor relations record (2.64), bio-degradable materials (2.67), training aids (2.85) and amount of past businesses (2.85). Respondents shared highly similar preferences to most of the factors since the total variance in their ratings was as low as 0.33. They shared most similar preference to “performance history” in supplier selection and evaluation (given by the least standard deviation of 0.50). “Reciprocal arrangement” and “recyclable material” are also factors that enjoy this similar preference in rating (0.57). On the other hand, respondents shared the most varied view on using “reputation and position in industry” as a criterion in supplier selection and evaluation (1.32) followed by “desire for business” (1.27).

Items	N	M	SD
Quality	33	4.48	1.06
Delivery	33	4.48	0.76
Performance history	33	4.00	0.50
Warranties and claims policies	33	4.09	0.84
Production facilities and capacity	33	3.88	1.14
Price	33	4.27	0.76
Technical capacity	33	4.15	0.83
Financial position	33	4.33	0.78
Procedural compliance	33	3.52	0.97
Communication system	33	3.33	0.65
Reputation and position in industry	33	3.12	1.32
Desire for business	33	3.06	1.27
Management and organization	33	2.82	1.13
Operating services	33	3.33	0.96
Repair services	33	3.42	0.94
Attitude	33	3.03	0.77
Impression	33	3.27	0.91
Packaging ability	33	2.91	0.91
Labour relations record	33	2.64	0.93
Geographical location	33	2.36	1.03
Amount of past business	33	2.85	0.94
Training aids	33	2.85	0.87
Reciprocal arrangements	33	2.48	0.57
Recyclable materials	33	1.85	0.57
Reusable materials	33	1.94	0.83
Environmental policy statement	33	3.03	1.24
Sustainable policy	33	3.00	0.71
Complying with national regulations	33	4.06	0.86
Bio-degradable materials	33	2.67	1.02
Overall		3.28	0.33

4.2.0 Reasons for preference given to supplier selection and evaluation criteria

Table 5.0 shows response to question 12 which is to ascertain the reasons accounting for the high preference of some factors at the expense of others, respondents were asked to indicate reasons for their ratings. For most of the respondents 15(45.5%), it is because their preferred factors offer value for money. Also, 11(33.3%) thought their preferred choices comply with the PPA Act 663 while 7(21.2%) believed their ratings were a product of value for money and compliance to the PPA Act 663.

	Frequency	Percent
Chosen factors offer value for money	15	45.5
Chosen factors comply with the PPA Act 663	11	33.3
All the above	7	21.2

4.2.1 Major hindrance to achieving organizational procurement objectives

Table 5.1 shows response to question 13. Respondents were asked for the major hindrance to achieving their organizational procurement objectives. Most of the respondents 18 (54.5%) pointed to the unwillingness of suppliers to comply with the procurement procedures. This may be due to the complex and the bureaucratic nature of the procurement process and the perceived unfairness in the procurement process as reported by some respondents. Also, 5(15.2%) respondents stated lack of commitment from management. Then, 2(6.0%) of

respondents indicated the limited selection criteria in the PPA Act 663. Other respondents gave other reasons as hindering the achievement of procurement objectives. 6 (18.2%) of the respondents stated lack of funds and lack of governments' commitment to the procurement process. 1(3.1%) pointed to inadequate qualified personnel to handle the procurement process while a respondent, constituting 3.0% said all the above factors militate against his organizational procurement goals.

	Frequency	Percent
Lack of management's commitment	5	15.2
Suppliers unwillingness to comply with procedures	18	54.5
Limited selection criteria in the PPA Act 663	2	6.0

4.2 DISCUSSION OF RESULTS

4.2.1 Supplier Selection and Sustainability Assessment

The idea of linking supplier selection and evaluation with sustainability is obviously a modern trend in current business criteria which is not considered in the Ghanaian public sector. This is evident in the study findings which revealed that less importance was attached to environmental criteria for supplier evaluation. Seventeen (17) out of the thirty-three (33) respondents representing 51.5% said environmental criteria are not part of the supplier evaluation criteria. It is therefore not surprising that the same number of respondents said it is difficult to ask current suppliers to be more sustainable taking environmental issues into considering while supplying goods and services. Green et al (1996) in

their research concluded that environmental signals in a firm's purchasing policies can stimulate suppliers to innovate, either on their own or in partnership with the purchasing firm, elucidating the mechanism of intra-organizational innovation. The question then is where should this environmental signal come from? Since the PPA Act guide public procurements, it has a major role to play in ensuring that, public procurement practice are reviewed to a more sustainable natures where there will be consideration for such issues as resource conservation, environmental protection and green supplies.

Further to the above, the research findings on supplier sustainability assessment confirmed that 78.8% of the respondents do not carry out any sustainability assessment of their suppliers. It is disappointing to note that, in this current state of globalization where every economy is strategically placing itself for green supply chain management, businesses within the public sector revealed otherwise. The various literatures reviewed that, modern procurement is concern with issues of not just the economy but also the community and even more importantly the environment. Green et al (1996) again mentioned that, the drive towards greater visibility of environmental effects and of real environmental improvement will be reinforced by those suppliers who adopt similar supplier assessment systems. Peng (2012) even puts it better, she said the best green supplier is the company's major strategic issue that needs scientific, rational and efficient selection criteria and methods. She said again that, among other things, enterprises should evaluate and select green suppliers on the basis of product life cycle assessment.

4.2.2 Importance Attach to Supplier Selection and Evaluation Criteria

As discussed earlier many criteria are available for organizations when it comes to factors needed for supplier evaluation. Many organizations as revealed by the study consider quality, price, timely delivery, technical capability, and performance history etc. in the supplier selection and evaluation in the public sector of Ghana. In Ghana these are the common criteria use, however in a modern business climate where new and emerging criteria give the supplier and purchaser the opportunity to consider environment issues, among the best five criteria that buyers will consider for supplier selection, modern business climate criteria like recyclable and reusable materials, environmental and sustainable policies and bio-degradable materials were all rated not important. The ratings ranged from as low as 1.85 (close to low) for recyclable materials to as high as 4.48 (close to high) for both quality and delivery as importance institutions attached to the criteria for supplier selection and evaluation. This implies that, most of the respondents do not consider recyclable materials which in fact are one of the emerging criteria in supply chain management before giving orders. The other criteria rated highly as revealed by the findings on evaluation criteria include; financial position (4.33), price (4.27), technical capacities (4.15), warranties and claims policies (4.09), complying with national regulations (4.06) and performance history (4.0) and other unimportant criteria relatively rated low include; reusable materials (1.94), reciprocal arrangement (2.48), geographical location (2.36), labour relations record (2.64), and bio-degradable materials (2.67). This goes to confirm the incomprehensiveness of the criteria in the PPA Act 663.

4.2.3 Reasons for Preference given to Supplier Selection and Evaluation Criteria

This paper's findings have revealed reasons accounting for the selection of a particular criterion for supplier evaluation. Most organizations will select a particular criterion for the money value that it offers, others on the other hand will evaluate suppliers' base on criteria set out in PPA Act. The indication is that, the Public Procurement Authority had a major role to play in ensuring that, whatever criteria that procuring agents are using to evaluate suppliers are comprehensive enough to consider sustainability and environmental issues that places Ghana in a competitive position.

4.3 SUMMARY

This chapter presented a detailed analysis of the research study findings presented in tables with frequencies and percentages. The findings revealed that, most public institutions ignore environmental and sustainability issues which are according to the various literatures reviewed modern trends in supplier evaluation. An interpretation in the form of a discussion of the results/findings of the study concluded the chapter.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATION

5.0 INTRODUCTION

Selection and evaluation of the right supplier is a complex decision process for many. It requires a lot of factors to be considered and measured and going through many tradeoffs. This implies that whatever criteria one decides to consider must be that which ensures that the objectives of procurement are achieved. This chapter gives the summary, which is a review of the objectives set for this study, conclusions and recommendations based on the various findings and results gathered in relation to the objectives. The summary therefore presents an outline of the objectives of the study and how each of these objectives has been achieved. The conclusion and recommendations capture the lessons learnt and possible application of findings. Finally, the chapter ends with recommendations for review of procurement practices/documents and for further studies.

5.1 SUMMARY

5.1.1 Review of Objective 1

Identify the factors considered in the selecting and evaluating of suppliers that help achieve public procurement

The criteria use in the selection and evaluation of suppliers and the importance place on these criteria in achieving procurement objectives cannot be

underestimated. Proper selection and evaluation criteria are a prerequisite for working with the right suppliers for the promotion of sustainable procurement. That is, the kind of procurement that considers all factors that has the environment, the society and the economy all included. The literature reviewed revealed current business criteria that can be considered with the common criteria like quality, price and delivery. This study revealed that public organizations consider criteria like quality, price, delivery time, technical capabilities among many other criteria foremost in the evaluation of suppliers.

5.1.2 Review of Objective 2

Ascertain the weight/importance placed on the various criteria use for supplier selection and evaluation

The study revealed that organizations attaché much importance to criteria like quality, delivery, performance history, warranties and claims policies, price, technical capabilities, financial position and compliance with national regulations in the evaluation of supplier. These criteria all had a mean of more than 3.5 and close to the highest score on the likert scale of 1-5. Contrarily to the much importance attached to these criteria by the public sector organization, recyclable and reusable materials, environmental and sustainable policies and bio-degradable materials were of little importance to these organizations. They rated them below 3.0 with others like the use of recyclable materials being as low as 1.85.

5.1.3 Review of Objective 3

Identify the constituent of comprehensive criteria for modern business climate of globalization and sustainability.

The preliminary literature reviewed exposed several modern business environmental criteria that should be considered. The literature provided this study criterion like environmental capacity, green supply chain management, whole-life cost, the use of bio-degradable, recyclable and reusable materials, environmental and sustainable policies, packaging ability as criteria that are complimentary to the traditional criteria making comprehensive criteria that consider all other criteria in needed for today's business environment.

5.2 CONCLUSION

The aim of the study was to identify the comprehensive criteria that align with modern business climate and the importance buyers attached to these criteria for supplier selection and evaluation. The study successfully identified these modern business climate criteria that are needed for a comprehensive supplier selection and evaluation through the various literatures reviewed. Most organizations attach much importance to quality, delivery, performance history, price etc. because these criteria offer value for money and also comply with the PPA Act 663 which is the document that guides procurement processes in Ghana. However, what is disappointing is that, most of these modern and sustainable criteria such as the use of bio-degradable, recyclable and reusable materials, environmental and sustainable policies were not common criteria use in the

public sector in Ghana. The following conclusion is drawn from the analysis in the preceding chapter and the review of the objectives:

- a. Most respondents considered quality, delivery, financial position, Price, Technical capability and Warranties and Claims policies as criteria for supplier evaluation because these factors offer value for money.
- b. Cost, quality and timely delivery play more important role than other environmental and sustainable criteria, hence no much attention is given to supplier sustainability assessment.
- c. Respondents gave little or no attention to current business environmental issues such as whole-life cost, the use of bio-degradable, recyclable and reusable materials, environmental and sustainable policies, packaging ability etc in their supplier evaluation criteria.
- d. The greater parts of the Ghanaian public institutions believe the public procurement act 663 of 2003 is helpful in the selecting and evaluating suppliers since it helps to achieve procurement objectives. These institutions however think opening up the current criteria to consider modern business environmental and sustainable criteria will enable Ghanaian companies to compete favourably in the increasingly global competitive business market.

5.3 RECOMMENDATIONS

The following recommendations are provided for review of procurement practices in Ghana base on the finding of this study:

- a. All the selection criteria are important and must be taken seriously into account.
- b. Institutions seem to greatly ignore environmental issues in their procurement processes which are the modern business criteria globally. They must act responsibly for the general good, not just for today but the future. For instance, it is realized from the results analysed that most of the respondents attached great importance to delivery (4.48), quality (4.48), price (4.27), and warranties and claims (4.09) but cared less about reusable and recyclable materials; 1.94 and 1.85 respectively.
 - o The PPA Act should be amended to take in all current business and environmental issues serious and made a necessary part of its supplier selection and evaluation criteria. Track record of environmental and sustainable policies and actions of suppliers must be part of the Acts requirements.
 - o The stakeholders in public procurement need to have a practical and broad understanding of these complimentary criteria that make for comprehensive global criteria for supplier evaluation.
 - o The PPA should ensure and enforce transparency and fairness in the procurement process to eliminate the perceived corruption and unfairness.

- c. The selection and qualification criteria and processes should be broadened so local businesses can also go through the selection and evaluation process easily and be considered for selection and award.

Further researches are recommended to widely consider which factors are significant for a specific area of industry. Consider the critical effect of sustainability factors on supplier selection and evaluation, focusing on the importance of supplier sustainability.

It is hoped that the findings of this study will go a long way to help the Public Procurement Authority to review public procurement practices to meet modern business demands and/challenges.

5.4 LIMITATION

In conducting the study the following limited the smooth flow of the work;

1. Difficulty in getting local materials on the subject matter
2. Some respondents feared opening up/being frank on the various issues asked.

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APPENDIX A: QUESTIONNAIRE

KWAME NKRUMAH UNIVERSITY OF SCIENCE & TECHNOLOGY

DEPARTMENT OF BUILDING TECHNOLOGY

QUESTIONNAIRE SURVEY (MSc Research Project)

TOPIC; AN EVALUATION OF THE IMPORTANCE THAT INSTITUTIONS ATTACH TO SUPPLIER SELECTION CRITERIA IN PUBLIC PROCUREMENT PRACTICES IN GHANA

GNUST

Please help by answering the following few questions.

(Please fill the provided spaces and tick an option where appropriate)

PART A: GENERAL INFORMATION

1. Job title.....
2. How long (years) have you been involved in procurement in this organization.....
3. Which of the following activities does your organization fall under
 - a. Health
 - b. Education and / or research
 - c. Social affairs/employment
 - d. Agriculture
 - e. Transportation
 - f. Construction
 - g. Defense/Protection
 - h. Economic affairs

- i. General public services
- j. Other, please specify.....

4. Please indicate how strongly you agree with the following statement regarding the organization's strategic supply:

Strongly agree Agree strongly disagree

a. We rely on small number of suppliers			
b. We get multiple quotations from suppliers before ordering			
c. We exchange performance feedback with our suppliers			

PART B: SUPPLIER SELECTION AND EVALUATION

5. Which of these non-price attributes does your organization consider most relevant for supplier selection.
Please tick which item(s) applies

a. Relevant Experience				
b. Relevant Skills				
c. Methodology				
d. Track Record				
e. Resources				
f. Financial Viability				

6. Which of these criteria are attributes your organization values in its selection and evaluation of suppliers?

- a. Cost
- b. Quality & Safety
- c. Delivery
- d. Service
- e. Social Responsibility
- f. Convenience/Simplicity
- g. Risk

7. Has the PPA Act 663 helped your organization to achieve its supplier selection and evaluation objectives?

- Yes
- No

8. Please indicate how strongly you agree with the following statements on management commitment to the PPA Act 663 guidelines:

Top management advocates for: **Strongly agree** **Agree** **Strongly disagree**

a. Judicious, economic and efficient use of state resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Integrate fairness and transparency in supplier selection and evaluation processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Compliance with the PPA ACT 663	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

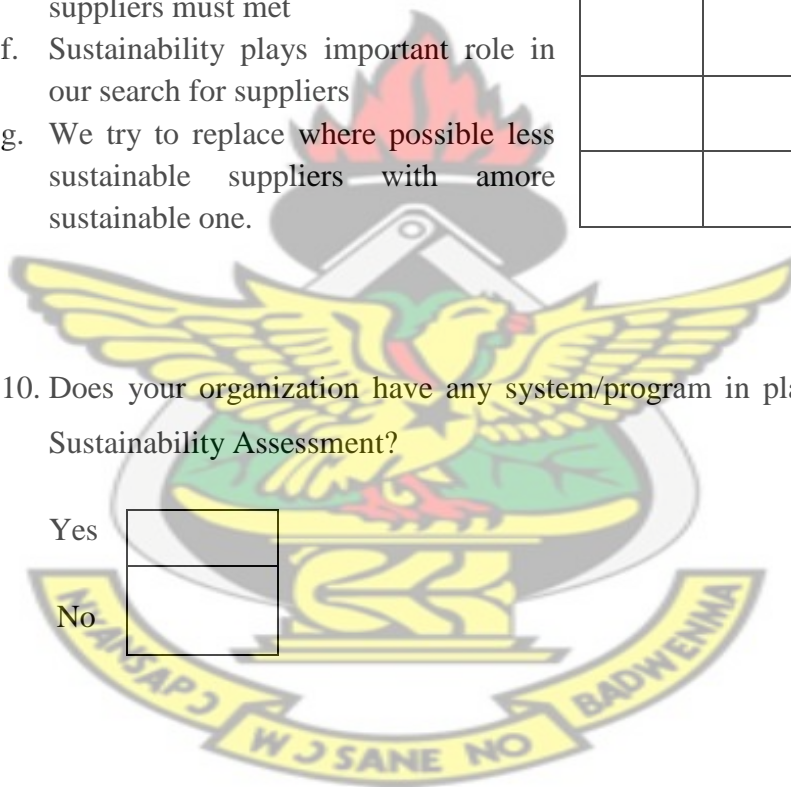
9. Please indicate how strongly you agree with the following statements regarding the suppliers selection and sustainability:

Strongly agree Agree Strongly Disagree

- a. We encourage existing suppliers to be more sustainable
- b. Cost, quality and timely delivery play more important roles than other sustainable criteria
- c. We actively consider switching to more sustainable suppliers
- d. It is difficult to ask current suppliers to be more sustainable
- e. We set environmental criteria that suppliers must met
- f. Sustainability plays important role in our search for suppliers
- g. We try to replace where possible less sustainable suppliers with amore sustainable one.

10. Does your organization have any system/program in place for Supplier Sustainability Assessment?

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>



11. Please indicate how you will score the following factors for supplier selection and evaluation on a scoring system of 1-5 points.

Please use: 1=Not Important; 2= Less Important; 3 = Important; 4 =Very Important; 5= Highly Important

Number	Factor	1	2	3	4	5
1	Quality					
2	Delivery					
3	Performance History					
4	Warranties & Claims Policies					
5	Production Facilities and Capacity					
6	Price					
7	Technical Capacity					
8	Financial Position					
9	Procedural Compliance					
10	Communication System					
11	Reputation and Position in Industry					
12	Desire for Business					
13	Management and Organization					
14	Operating Services					
15	Repair Services					
16	Attitude					
17	Impression					
18	Packaging Ability					
19	Labour Relations Record					
20	Geographical Location					
21	Amount of Past Business					
22	Training Aids					
23	Reciprocal Arrangements					
24	Recyclable materials					
25	Reusable materials					
26	Environmental policy statement					
27	Sustainable policy					
28	Complying with national regulations					
29	Bio-degradable materials					

12. Please indicate why you scored one factor higher than the other?

- a. Familiarity with chosen factors
- b. Easy Application of the chosen factors
- c. Chosen factor offer value for money
- d. Chosen factors comply with the PPA Act 663
- e. All of the above
- f. Other, please specify.....

13. What in your opinion is the major hindrance to achieving your organitional's procurement objective?

- a. Lack of management's commitment
- b. Unavailability of qualified suppliers
- c. Suppliers unwillingness to comply with procedures
- d. Limited selection criteria in the PPA Act 663
- e. Other, please specify.....

14. What in your opinion are the other factors/criteria that should be considered for supplier selection and evaluation?

.....

.....

15. Any other comments

.....

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Thank you for taking time to complete this questionnaire. Please be assured that all responses are for academic purposes only.