European Journal of Economic and Financial Research
ISSN: 2501-9430
ISSN-L: 2501-9430
Available on-line at: http://www.oapub.org/soc

DOI: 10.46827/ejefr.v8i4.1782 Volume 8 | Issue 4 | 2024

AN EVALUATION ON THE IMPACT OF SUSTAINABILITY PRACTICE IN PUBLIC PROCUREMENT: A CASE OF THE SIERRA LEONE AIRPORT AUTHORITY, PORT LOKO DISTRICT NORTH-WEST REGION OF SIERRA LEONE

Osman G. Kamara[1i],
Foday Bassie Turay[2]
[1]Lecturer,
Faculty of Business and Entrepreneurship,
Department of Procurement, Logistics and Supply Chain Management,
Earnest Bai Koroma University of Science and Technology,
Magburaka, Sierra Leone
[2]Senior Lecturer,
Faculty of Pure and Applied Science,
University of Lunsar,
Lunsar, Sierra Leone

Abstract:
This study assesses and evaluates the impact of sustainability practices in public procurement in the Sierra Leone Airport Authority Portloko district, North-West region of Sierra Leone. Evaluating sustainable procurement practices in public procurement is essential as sustainability is a discrete business activity that links the value chains for public procurement. The public procurement value chain environment has been subjected to various challenges, from purchasing decisions that are averse to humans to issues of climate change that impact procurement decisions. Furthermore, the principle of balancing the triple constraints (economic, social, and environmental) directly influences procurement decisions, especially within public procurement and value-for-money principles. The study employed a survey design because of its broad capability to solicit information from the respondents. Both primary and secondary data were used to collect data from the respondents. The primary data was collected using a questionnaire, which was captured using the Census and Survey Processing (CSPro) system and later exported to SPSS for more descriptive statistics. The finding reveals that in the case of repair and maintenance work, issues like rigorous quality and product life cycle need assessment, sustainability consideration in the procurement process, and sustainable reuse of garbage and debris are almost equally important (45%, 30%, 25%) according to respondents' perceptions. So, respondents agreed upon the importance of sustainability in procurement. Nevertheless, on the other hand, 80% of respondents say that they are

[i] Correspondence: email ogkamara1985@gmail.com, fodaybassieturay1988@gmail.com

practicing the lowest quoted price criteria as a contract which may not cover sustainability issues effectively. Monitoring and Evaluation help improve performance and achieve results. More precisely, the overall purpose of procurement monitoring and evaluation is the measurement and assessment of compliance and performance in order to effectively manage the outcome and outputs known as development results. Performance is progress towards the achievement of desired results. Compliance is progress towards the achievement of procedures and processes that have been laid down. The need to demonstrate compliance and performance is placing higher demands on monitoring and evaluation in public procurements. Traditionally, monitoring and evaluation focused on assessing inputs and implementation processes. Today, the focus is on assessing the contributions of various factors to sustainability practice in public procurement.

JEL: Q56, H57, M14, D61, L23, O22

Keywords: sustainability, practice, public procurement, monitoring, evaluation, environment, economic

1. Introduction

The benefits of balancing economic, environmental, and social elements in procurement processes and operations are not a new development. In Sierra Leone, for instance, many public institutions in the last decade have begun to realise the need for efficient use of energy, not engage minors in employment, recycling, stakeholder engagement and non-discrimination in sourcing, among others, to reduce costs and improve overall procurement practices in the context of sustainability and whole life costs in the process of public procurement (Kwabena Sakyi, 2016). Based on the Brundtland Commission's first definition, sustainable development is defined as development that "*meets the needs of the present without compromising the ability of future generations to meet their own needs*" (WECD, 1987: 8)

According to Linton *et al.* (2007), there are increasing economic pressures and rising expectations of customers and other critical stakeholders in procurement practices. The strict government regulation towards more emphasis on "green" supply for many companies and public institutions is essential for sustainable practices, (Blackburn, W. R, 2007). The phenomenon has become more difficult, especially for organizations to maintain profitability and value for money while ensuring environmental friendliness in their procurement practices. The institutions must go beyond simply using recycled materials and comply reluctantly with government regulations in their procurement practices. Contracting entities that are deeply committed to sustainability and want to achieve their full value share traits and practices such as transparency, measurement, and sustainability must formalise their supply chain activities by concentrating and practising strategic innovation through a reduction process and emphasising the overall two total

costs of ownership as well as disposal of the final product or work (de Man and Burns, 2006; Linton *et al*., 2007).

The continuous exploitation of the environment without corresponding and or conscious effort to protect what has been taken due to human activities to a better life and or improve social conditions defeats the concept of sustainable procurement. The benefits from such practices are manifold as sustainable procurement is a direction focused on maintaining strong supplier partnerships that create value propositions across the supply chain relationships (Wells, 2006; Steurer and Konrad, 2007; Koplin, 2007). Furthermore, the European Commission (2004) has indicated that sustainable procurement ensures proper environmental standards that include saving a lot in terms of financial resources and social benefits for the public. Sustainable procurement practices meet organisational needs on the basis of the whole life cycle of generating benefits whilst minimising environmental damage (Steurer & Konrad, 2007).

An improved sustainable procurement practice, despite the challenges, is the driving force behind the benefits and impacts of realising value for money within public procurement and sustainable purchasing practices. The role of procurement professionals in appreciating the challenges and benefits of sustainable procurement helps ensure that public procurements are executed devoid of causing harm to the environment and increasing the cost of supply.

Public procurement is vital in driving sustainable development, as government is a major consumer of goods and services. In Sierra Leone, adopting sustainable public procurement practices has been identified as a critical strategy to promote environmental protection, social responsibility and economic development. The Sierra Leone Airport Authority (SLAA) is a public entity responsible for the country's air transport infrastructure; the writer presents an interesting case study to evaluate the impact of sustainability practices in public procurement in Sierra Leone.

This study describes the theoretical background of sustainability & and sustainable procurement. Sustainable Public Procurement is a purchasing and investment process that considers the economic, environmental, social, and institutional impacts of the entity's spending. The chronological emergence of the phenomenon of sustainability, and its link to environment, development, procurement and public procurement has been analysed here. Some concepts relevant to sustainable procurement have also been presented. The research work starts with a thorough and critical review of existing literature. Henceforth, the concept of sustainable development, sustainable/responsible procurement in the public sector, and potential drivers and constraints of sustainable procurement have been analysed. To gain in-depth knowledge, different books, journals, publications, and websites were reviewed. Public Procurement Act 2004/2016 and Public Procurement Regulations (2006) have also been reviewed to see their coverage of the sustainability of procurement. Different policy documents & and newspaper articles have also been reviewed to examine the current exposure of the issue, which act as an aid to this research questionnaire.

1.1 Statement of the Problem

The main objective of sustainability practices in the Public Procurement Act (2004) is to achieve judicious/careful economic, social and environmental prudence in the use of state resources in public procurement and to ensure that public procurement is carried out in a fair, openness, transparent, economic, non-discriminatory and competitive manner.

Over the years, public procurement has been a critical function for the government of Sierra Leone, as it accounts for a significant portion of the country's annual budget and is responsible for securing essential goods, services and infrastructural operations in projects. However, traditional public procurement practices in Sierra Leone have often prioritised short-term cost savings over long-term sustainability considerations. This approach has led to the impeding negative economic, social, and environmental impacts, which include environmental degradation, social inequality, and economic inefficiency.

Nonetheless, its implementation is not without these challenges:

- Delay and long procurement processes,
- Significant human interference,
- State interference,
- Less transparency,
- Lack of professionalism and discrimination in the selection and award of contracts.

Also, the following are other challenges:

- **Shortage of staff**: this is the most serious problem when considering the sustainability practices in their daily activities, also most likely being properly trained for procuring sustainable materials.
- **Lack of facilities:** Sometimes due in the accessibility of e-procurement facilities in most departments at the Sierra Leone Airport Authority is a major challenge to maintain sustainable work in various departments.
- **Lack of knowledge:** There is a major lack of knowledge regarding environmental issues, not least related to harmful chemicals and the legal scope of setting environmental criteria in public procurement. Checking qualification criteria and assessing tenders are particularly difficult points to deal with.
- **Communication barriers:** In contrast to private players – who can purchase what they want based on the core values they support and the knowledge bank they themselves choose to build – legislation prevents contracting authorities from establishing good and long-standing contacts with suppliers, which makes it more difficult to develop sustainable value chains.

1.2 Justifications

Since sustainable practices are a new discipline to some extent in the new development of procurement operations in developing countries, as the case of Sierra Leone, which is presently undergoing, the study, in this case, is of greater relevance since the problematic constraints being encountered in the introduction of sustainable practices in public procurement. Therefore, the study seeks to provide some excellent and vital remedies or

corrective measures with the intention of combating multiple difficulties. Also significant of the study, however, is that the appropriate vital measures taken will serve as security and firmly aid in upgrading both SLAA and the country as a whole.

1.3 Research Question

Because of the context, to achieve the research target, the following questions are set:

- To assess and evaluate the level of sustainability practice in the public procurement process,
- What is the level of understanding & and preparedness about sustainability in Public Procurement among mid-level officers of the Sierra Leone Airport Authority, and
- How much sustainability is being practised in the public procurement process of the Sierra Leone Airport Authority?

1.4 Scope of the Research

The focus of this study will basically remain on public-sector procurement. In this study, an effort will be made to provide comprehensive insight into the state of sustainable procurement preparedness & and practice in public sector organisations in Sierra Leone, specifically the Sierra Leone Airport Authority. Information gathered through Key Informant Interviews (KII) with a questionnaire among a number of mid-level officers of SLAA will lend support to the research on the extent of sustainable procurement and how they define the economic, environmental and social considerations of sustainable procurement, how long they are prepared and how much they practice sustainability into their public procurement process.

1.5 Hypothesis

The hypothesis is a projected statement subject to an empirical test. A hypothesis is made in order to find the correct and valid explanation of certain processes or phenomena through scientific investigation. Hypothesis enables direct inquiry along the right lines. Hypothesis determines the method of verification as well as the procedure of inquiry. The hypothesis is the focal point of any research and must be formulated so that it can be tested and will permit the formulation of another hypothesis. The hypothesis needs to be in line with the research method, related to existing theory, specific & and testable, simple & and clear concept and empirically verifiable.

The hypothesis of the proposed study is: "*Much more attention and preparedness are needed to practice sustainability in the procurement process of the Sierra Leone Airport Authority (SLAA) or Public Procurement as a whole or Public Procurement as a whole*".

1.6 Methodology and Data Collection

The study focuses on the twin approach – qualitative and quantitative methodology. By solely looking at the stated research questions, the survey would be adopted as the

research methodology. Consequently, the enquiry would be conducted through the use of a questionnaire to collect quantitative data.

A structured questionnaire (containing mainly closed-ended questions) was used to elicit information from respondents. The rationale behind the use of closed-ended questions is to have control over the responses due to the special nature of the study. The sampling technique to be adopted is the Purposive Sampling Technique (PST). Owing to the specific needs of the study, this targeting technique was most appropriate.

2. Literature Review

Introduces the concepts of sustainability, sustainable development and sustainable procurement in order to give a theoretical view of the subject matter the concepts of various sustainable procurement terminologies have also been elaborated in this study. Sustainable procurement (SP) is a procurement process that is concerned with the principles of sustainable development, such as ensuring a just and healthy society, living within environmental limits, and promoting good governance.

According to the United Nations procurement website, procurement is called sustainable when it integrates requirements, specifications and criteria that are compatible/friendly and in favour of the protection of the environment, social progress and support of economic development, namely by seeking resource efficiency, improving the quality of products and services and ultimately optimising costs (UNGM, 2011). Through sustainable procurement, organisations use their own buying power to give a signal to the market in favour of sustainability and based their choice of goods, works and services on it.

2.1 Sustainable Public Procurement Integrated Factors:

- **Economic factors:** These include the cost of products and services over their entire lifetime as well as the cost for society as a whole to ensure real value for money over the longer term ("Whole life costing, WLC")
- **Environmental factors:** To reduce the environmental impact of goods, works, and services (impacts on health and well-being, air quality, generation and disposal of hazardous material) and to minimise the use of resources (reduce, recycle, reuse) throughout the supply chain (also referred to as "green procurement").
- **Social factors:** These include recognising equality and diversity; observing core labour standards; ensuring fair working conditions; increasing employment and skills; and developing local communities (also referred to as "socially responsible procurement")

Public Procurement Board (PPB, 2003) defines procurement as the process of acquiring goods, works and services, covering both acquisitions from third parties. The process involves options, appraisal and the critical "make or buy" decision which may result in providing goods and services in appropriate circumstances. Mulch (2009)

defines procurement as a "*formal process by which many organisations obtain goods, works and services*".

- **Public Procurement:** Is defined by the European Commission as "*A process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured.*"
- **Sustainability:** Is the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

2.2 Sustainable Public Procurement

Sustainable Public Procurement (SPP) is receiving increasing attention as a consequence of a rise in environmental, social, and economic challenges in both developed and developing countries.

- **Monitory:** This is defined as a continuous activity that aims primarily at providing relevant information to management and main stakeholders of an ongoing action with early indications of progress, or lack thereof, in the achievement of predetermined results. An ongoing intervention might be a project, programme, or other kind of support for an outcome.
- **Evaluation**: This is considered a selective exercise that attempts to systematically and objectively assess progress towards and the achievement of an outcome. Evaluation is not a one-time event but an exercise involving assessments of differing scope and depth carried out at several points in time in response to evolving needs for evaluative knowledge and learning during an effort to achieve an outcome. All evaluations need to be linked to outcomes as opposed to only implementation or immediate outputs
- **Tools, Approaches and Methods in Monitoring:** Monitoring and evaluation (M & E) of various and varied activities provide public officials, development managers, and civil society with better means of learning from past experience, improving service delivery, planning and allocating resources, and demonstrating results as part of accountability to key stakeholders.
- **Impact of Evaluation:** This is the systematic identification of the effects – positive or negative, intended or not – on individual households, institutions, and the environment caused by a given development activity such as a program or project. The impact of evaluation helps us better understand the extent to which activities reach the necessary establishment and the magnitude of their effects on people's welfare. The impact of evaluations can range from large-scale sample surveys in which project populations and control groups are compared before and after, and possibly at several points during program intervention, to small-scale rapid assessment and participatory appraisals where estimates of impact are obtained from combining group interviews, key informants, case studies and available secondary data

- **Sustainability Development Goals:** The Sustainability Development Goals (**SDG**) are the current harmonised set of seventeen future international development targets.

The official agenda for sustainable development adopted on 25th September 2015 has 92 paragraphs, with the main paragraph (51) outlining sustainable development goals and its associated 169 targets.

This includes the following 17 goals:

1) **Poverty:** ends poverty in all its forms everywhere
2) **Food:** ends hunger, achieve food security and improved nutrition and promote sustainable agriculture
3) **Health:** ensures healthy lives and promote well-being for all at all ages
4) **Education:** ensures inclusive, equitable quality education and promotes lifelong learning opportunities for all
5) **Woman:** achieves gender equality and empowers all women and girls
6) **Water:** ensures availability and sustainable management of water and sanitation for all
7) **Energy:** ensures access to affordable, reliable, sustainable, and modern energy for all
8) **Economy:** promotes sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9) **Infrastructure:** builds resilient infrastructure, promotes inclusive and sustainable industrialization and fosters innovation
10) **Inequality:** reduces inequality within and among countries
11) **Habitation**: makes cities and human settlement inclusive, safe, resilient and sustainable
12) **Consumption:** ensures sustainable consumption and production patterns
13) **Climate:** takes urgent action to combat climate change and its impact
14) **Marine-ecosystems:** conserves and sustainably use the oceans, seas and marine resources for sustainable development
15) **Ecosystem**: protects, restores and promotes sustainable use of terrestrial ecosystems, sustainably manage forest combat desertification and halt and reserve land degradation and halt biodiversity
16) **Institutions**: promotes peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17) **Sustainability:** strengthens the means of implementation and revitalize the global partnership for sustainable development

2.3 Value for Money and Social Research in Sustainable Public Procurement

2.3.1 Value for Money in Procurement

Value for Money (VFM) is the optimum combination of the whole cost and quality of a product to meet the customer's requirements. It is reflected in the price of the item or

service procured. It has to be noted that VFM is a critical measure of the effectiveness of the procurement process, as well as its outputs and outcomes. Achieving VFM requires a strategic and integrated approach to procurement (PPA Manual, 2006). This, of course, has significant organizational and institutional implications. This in procurement function is an important test against which well-functioned procurement management must be addressed to justify a procurement outcome as necessary conditions for best value, transparency and accountability in public procurement (World Bank, 2003). VFM is, therefore, associated with the deployment of resources to realize some expected value in an economically efficient and effective manner.

2.3.2 Social Research Models

A model is an innovation, an abstract of some part of the real world and is an incomplete representation of a real thing. A model is central to every analysis. To construct a model for a given problem situation, the actions to be taken are- to single out certain elements as being relevant to the problem under consideration, to make explicit the significant relationship among these elements and to formulate a hypothesis regarding the nature of the relationship. Models can be classified broadly into two types: quantitative and qualitative models. A quantitative model is a mathematical model defined by a precise set of assumptions expressible in terms of a well-defined set of mathematical relationships. The behaviour of such a model is determined completely by assumptions and the conclusions are derived as logical consequences of those assumptions without recourse to judgment or intuition about the real-world process. A quantitative model is used here. Social research entails scientific investigation conducted in the field of social sciences using theories, models, concepts, tools, techniques, and processes drawn from the various disciplines of social and behavioural sciences to explain, interpret, understand and improve the social issues, problems and institutions. P.V. Young defines social research as the systematic method of discovering new facts or verifying old facts, their sequences, interrelationships, casual explanations and the natural laws which govern them. Social research focuses primarily on human behaviour and social issues and problems. There are different types of social research. Here, it is an applied type of evaluation research.

3. Research Methodology

According to Webster's International Dictionary, research is a careful critical inquiry or examination in seeking facts or principles and diligent investigation in order to ascertain something. Since research is ‘re + search’, Leedy (1989) says research is a critical and comprehensive investigation or experimentation having as its aim the revision of accepted conclusions in the light of newly discovered facts. More formally, research is a systematic, careful inquiry or examination to discover new information or relationships and or to expand or verify existing knowledge for some specific purpose.

The aim of the research is to:

- Find new dimensions and generalizations with old data.
- Know old conclusions with new data.
- Reach in one conclusion from the same set of data.
- Put forward an entirely original idea or theory or discover an unexplored horizon of knowledge.
- Find or resolve contradictions existing in the area of study.

Research methodology is the combination of tools, techniques and approaches through which scientifically designed research is actually carried out. Research is a cyclical process that begins with a problem, an unanswered question in the mind of the researcher. The research sees the goal as a clear statement of the problem. Research subdivides the problem into appropriate subproblems. Research posits tentative solutions to the problem through appropriate hypotheses. These hypotheses direct the researchers to the facts. Research looks for facts directed by the hypothesis and guided by the problem. The facts are collected and organized. The research interprets the meaning of the facts, which leads to a resolution of the problem, thus confirming or rejecting the hypothesis and providing an answer to the question that began the research cycle.

3.1 Research Design

The study employed a survey design because of its broad capability to solicit objective responses from the sample on the subject under consideration (Fowler Jr, 2013).

3.2 Population

The population was comprised of a select number of staff members at the Sierra Leone Airport Authority located at Masoila, Suctar and Kasongha of Lungi, Portloko District.

The elements used in the collection of data for this study were strictly qualitative. The study also adapted to the descriptive and participatory of staff in different departments. The research strategy involves staff through interviews and participation of staff in the questionnaire. Quantitative tools like Census and Survey Processing (CSPro) systems were used to capture the data and export it to SPSS for more descriptive statistics like tables and charts.

This type of research design is to collect data from respondents who are believed to be a representation of the population, in the Sierra Leone Airport Authority. Interview and questionnaire administration were used to conduct this study. A focus group discussion was also used to facilitate the gathering of relevant information to meet the objectives of the study and the area in question.

3.3 Sample Size and Sampling Procedure

Convenient sampling and purposive sampling techniques were employed to draw the sample population for the study. A total number of 24 mid-level officials were sampled out of the entire population that work at the Sierra Leone Airport Authority at Lungi.

This sample size was considered appropriate for the study since it represents a fair size of the entire population that works at the Sierra Leone Airport Authority.

The time limit for the completion of the study was so short that it was impossible to choose a larger sample of the population. A purposive sampling technique was used to select staff with knowledge of public procurement and/ or knowledge of the operations of the Sierra Leone Airport Authority. Convenience sampling was also used because only available and willing staff had questionnaires being administered to them.

The sampled respondents were deemed to have the required information relevant to answering the objectives of this study. A purposive sampling technique was also used to select staff members from the Procurement Department and staff members from the Works Department.

3.4 Mode of Data Collection

Both primary and secondary data sources were used for the study. Secondary data for this study were collected from the Sierra Leone Airport Authority, Lungi, Portloko District, Northern part of Sierra Leone, which entailed relevant documents needed to answer the objectives of this study. In addition, articles, journals, textbooks, and other relevant information from the internet were also used.

Primary data were the first-hand information collected during the study. The primary data of this research were collected through the questionnaires administered to the administrative staff of the targeted study base (Sierra Leone Airport Authority) and interviews conducted during the data collection for the study.

3.5 Research Instrument

Questionnaires comprising three (3) sections and composed of open and closed-ended items were adopted and used to collect data from the respondents.

Section A contains items that solicited the demographics of the respondents. It deals with the general information of the respondents and the concept of sustainability. Section B contains items that elicited respondents' views on the preparedness to execute sustainable public procurement in Sierra Leone. Section C will examine sustainability practices in public procurement in Sierra Leone with a concentration on the Sierra Leone Airport Authority.

4. Data Analysis and Discussion

The data have been collected by filling up a questionnaire by mid-level responsible procurement professionals of the Sierra Leone Airport Authority (SLAA) in order to achieve the research objectives mentioned above. Sustainable procurement encompasses three dimensions economic, environmental and social aspects of procurement. A questionnaire was designed, including a number of questions which covered not only the above mentioned three aspects of sustainable procurement but also the information about the organisation's procurement.

There are three sections in the questionnaire, and each set of questions is labelled as Section (A, B and C):

- **Section A** acts as a condition for the respondents. The questions were intentionally set in such a way that the respondents will be reminded about the concepts & and aspects of sustainability. A question was set to seek sustainability practices in the respondents' daily lives.
- **Section B** is about preparedness to practice sustainability in procurement activity. This section provides the answers to the questions of how much the respondents are prepared to practice sustainability in procurement activity.
- **Section C** is about the extent of practice sustainability in the procurement process of their jurisdiction. Some general questions have been set at the end of the questionnaire to get the perception of the respondents about the potential drivers and obstacles of sustainable procurement.

4.1. Average Procurement Portfolio of Respondents

A total of twenty-four mid-level (executive engineer, sub-divisional engineer) officials of Sierra Leone were interviewed using the same questionnaire to conduct the survey. These officials have been selected because of their direct involvement in public procurement activities in their jurisdiction. The respondents were selected randomly and interviewed. The average length of experience in procurement activity of the respondents is 10.6 years, ranging from 4 years to 20 years. The average annual volume of procurement is 72.2% core at their involvement. Since the Sierra Leone Airport Authority is a prime construction agency of the government work is their main procurement item. Their procurement portfolio on average, is works 1.25%, goods 5.13% and services 93.62%. The composition of services is, on average, 73.40% new services provider and 26.60% is repair and maintenance work.

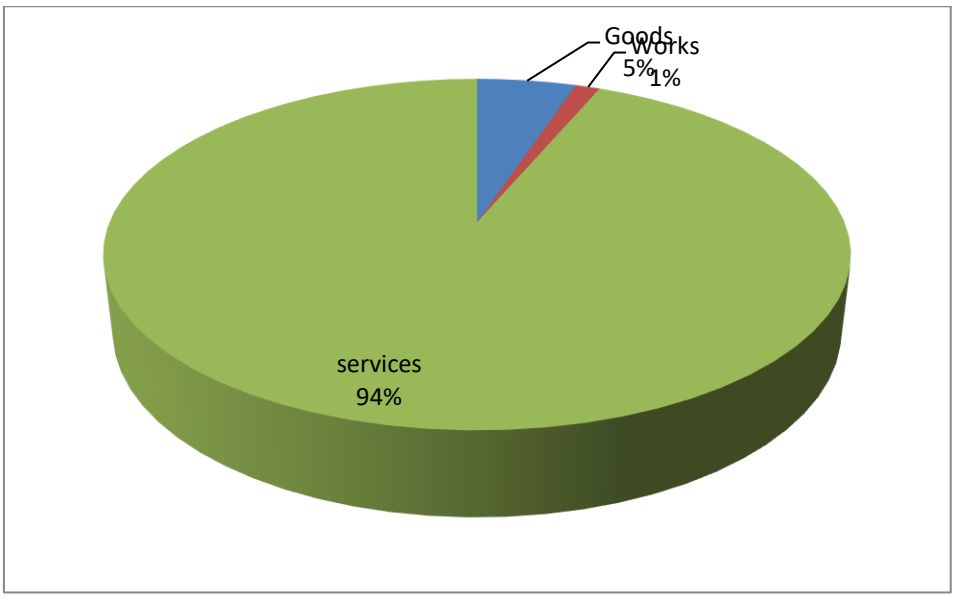

Figure 4.1: Average procurement portfolio of respondents

4.2 Response to the Questions on the Basic Concept (Section A)

The multiple-choice questions of this section were set in such a way that it will remind the respondents about the definition and concept of different aspects of sustainability and sustainable procurement. 58% of respondents answered correctly about the definition of sustainable procurement, which is "*a process of meeting organizational need in a way that achieves best value for money on whole life basis whilst minimizing damages to the environment and society*" 42 respondents wrongly chose the definition of sustainable procurement as "*conducting procurement activity efficient and effectively which is actually operational efficiency rather than sustainability in procurement"*. 67% of respondents correctly answered the definition of the economic aspect of sustainability that is justifying best value for money, whilst 29% answered as considering the whole life cost of an activity, which is actually sustainability as a whole, which includes social and environmental aspects as well. Social sustainability and environmental sustainability were defined correctly by 88% and 79% of respondents, respectively. In responding which is the most important issue from a sustainable point of view for the construction of new buildings, 58% say sustainability considerations in building design, 25% say procurement process, 27% say sustainability considerations in procurement and 17% say sourcing construction materials from sustainable sources.

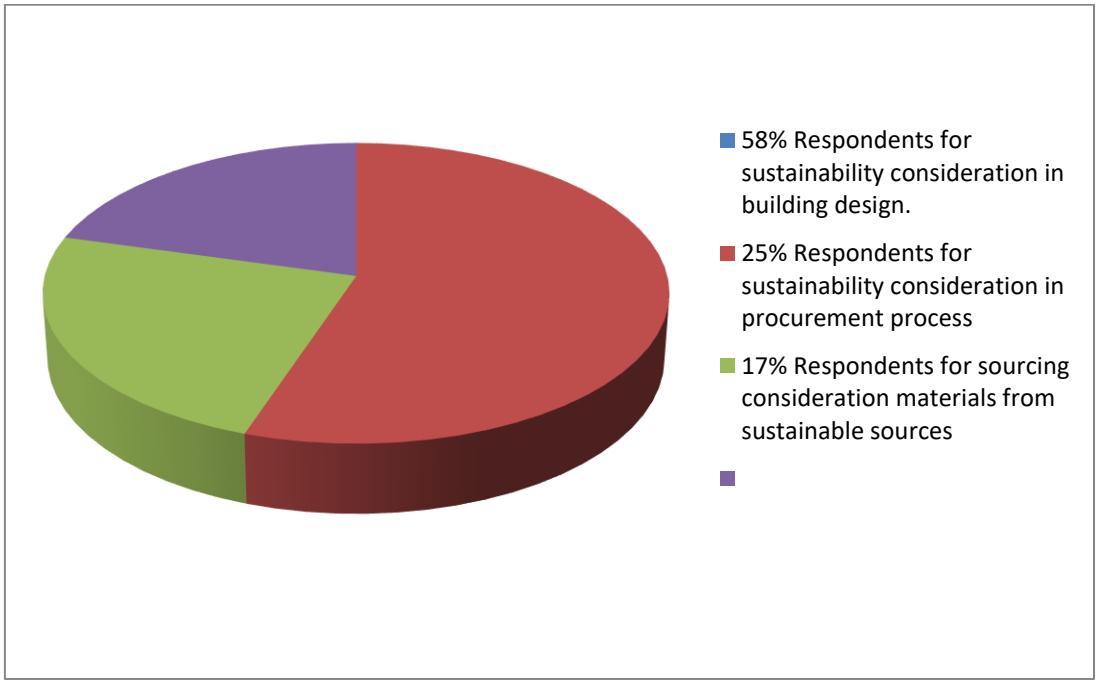

Figure 4.2.1: Sustainability issues for construction of new building

In the case of repair and maintenance work, issues like rigorous need assessment, sustainability consideration in the procurement process and sustainable reuse of garbage and debris are almost equally important (45%, 30%, 25%) according to respondents' perceptions. So, respondents agreed upon the importance of sustainability in procurement. On the other hand, 80% of respondents say that they are practising the

lowest quoted price criteria as contact, which may not cover sustainability issues effectively. MEAT (Most Economically Advantage Tender) or WLC (Whole Life Cost) could be a better option for contract award criteria to ensure sustainability.

All the respondents are highly educated and highly official of the public body. They were asked questions about their daily sustainability practices, and 80% of respondents said they always turn electrical switches after use. 70% say they always try to use less water in their daily activity, and only 60% of respondents say they always try to buy energy-saving electronics and IT equipment. Replying to try avoiding plastic buys 15% says always and 80% says sometimes. 70% of respondents say they try to practice the 4R policy in daily life.

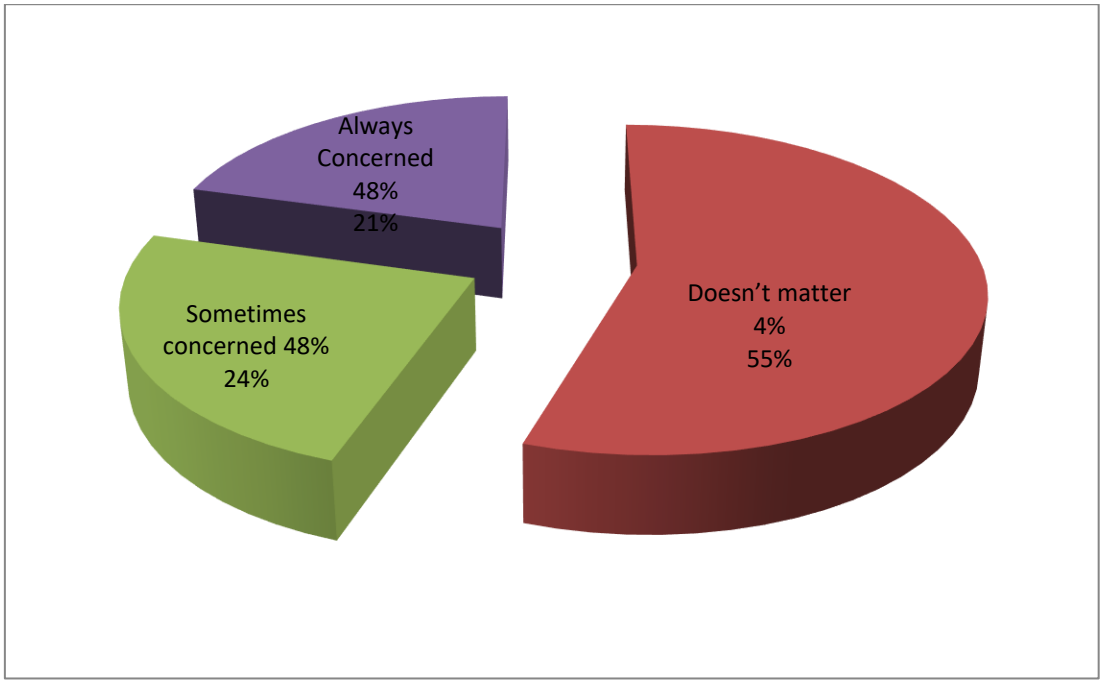

Figure 4.2.2: Respondents concern about sustainability practices in daily life

On average, of the above-mentioned sustainability aspects of daily life, 48% of respondents say they are always concerned, 48% say they are concerned sometimes, and 4% say it does not matter to them.

The value chain for the respondents who say they are always concerned is 21% (value = 1.2), concerned sometimes is 24% (value = 1.4), and not matter is 55% (value = 3.2).

From Section A, it can be conferred that most of the respondents have an idea about the definition of different sustainability aspects though a good number of respondents have confusion over it. Respondents agreed upon the importance of sustainability considerations in the procurement process of work procurement though they don't practice the contract award criteria, which may ensure sustainability considerations in the procurement process. Respondents say that they are aware enough of sustainability concerns in their daily lives.

4.3 Response to the Questions on Preparedness (Section B)

In this section (Section B) questions were set to judge the degree of preparedness of the respondents to practice sustainability in their procurement process. They were asked about their degree of agreement with some sustainability statements. Scores were set as for strongly agree = 5, agree = 4, neutral = 3, disagree = 2 and strongly disagree = 1. When the respondents were asked about their degree of agreement with the statement 'Sustainability consideration in the public procurement process is very important in developing economies like Bangladesh', the average score was 4.29. That means respondents are near about strongly agree with the importance of sustainability considerations in the public procurement process. However, when they were asked about their preparedness to practice sustainability considerations in their procurement process, the response was not quite satisfactory. The average response score corresponding to statements are given in tabular form below.

Table 4.3.1: Preparedness of respondents on sustainability in procurement

ID	Statement	Score
1	I have enough training and I am capable of conducting public procurement activity.	3.46
2	I have enough training and I am capable of conducting sustainable public procurement activity.	2.75
3	I have a clear conception of the economic aspect of sustainability.	3.04
4	I have a clear conception on the social aspect of sustainability.	3.08
5	I have a clear conception on the environmental aspect of sustainability.	3.13
6	I think PPA-06 and PPR-08 have addressed sustainability in the procurement process properly.	3.04
7	I think PPA-06 & PPR-08 have addressed social sustainability in the procurement process.	2.79
8	I think PPA-06 and PPR-08 have addressed environmental sustainability in the procurement process.	2.75
9	I think SLAA has the following Environmental Management System (EMS) in their practice.	3.00
10	I think itemized specification of the PWD schedule of rates addresses sustainability in procurement duly.	3.29

The table shows the respondents scored highest in 'I have enough training and I am capable of conducting public procurement activity'. Even this highest score is only 3.46 which means they are in between neutral to agree level. The score shows they are not confident enough. But when they were asked 'I have enough training & I am capable of conducting sustainable public procurement activity' by just adding one word 'sustainable', the score was the lowest among all. A score of 2.75 is below neutral, showing they are not prepared enough to conduct sustainable public procurement.

Respondents also declined to agree (neutral = 3.04 score) when they were asked about 'PPA-06 and PPR-08 have addressed sustainability issues properly' they fairly agreed with the statement that 'itemized specification of SLAA schedule of rates is addressing sustainability in procurement' (3.29 score). The average scores of responses against different statements are shown below in the bar chart.

From Section B it can be conferred that respondents highly agree with the importance of sustainability practice in public procurement, but they are not prepared or confident enough to practice it. Even PPA-04 and PPR-06 have not addressed the issue properly to help practice procurement professionals.

4.4 Respondents to the Questions on Sustainability Practices (Section C)

The main aim of this section is to judge the level of practising sustainability in procurement activity by mid-level procurement professionals in SLAA. When they were asked whether they could mention any section or article from PPA 2004 Or from PPR 2006, which they are practising in their procurement activity only 20 % said they can but; none of them can specifically mention the article. Only one-fourth of respondents say they can mention measures deliberately wrong in the procurement process to ensure social and environmental sustainability. In the case of economic sustainability positive response is 50%. I think there is some ambiguity regarding the issue. 83% of respondents say they are practicing the lowest quoted price criteria as a contract which may not support justifying best value for money to ensure economic sustainability. Respondents are confusing the lowest quoted price criteria as the means of economic sustainability, so in a true sense positive response will be less than 50%.

Table 4.4.1: Respondent's response to sustainability performance statement

ID	Statement	Yes	No
1	I can mention sections/ articles from PPA2004/PPR 2006/STD that are addressing sustainability in procurement	21%	79%
2	I can mention that we are practising in our procurement process to ensure economic sustainability	50%	50%
3	I can mention that we are practising in our procurement process to ensure social sustainability	21%	79%
4	I can mention that we are practising in our procurement process to ensure environmental sustainability	29%	71%
5	I put criteria deliberately in the tender documents to encourage participation of local SME firms	29%	71%
6	I put criteria deliberately in the tender documents to enhance suppliers/contractors' environmental performance such as less carbon emission, less material consumption	29%	71%
7	I put requirements for contractor in the tender document to have and practices environment management system	17%	83%
8	I think sustainable building design (to minimize future consumption of energy, water and maintenance services) is promoted in SLAA	79%	8%
9	I am practicing the E-procurement process to ensure	8%	92%

	transparency, promoting competition and achieving value for money		
10	I visit our suppliers/contractor's plant/factory/workshop/office to verify the reality of child labour/force labour/unfair wage/human right violation	33%	67%

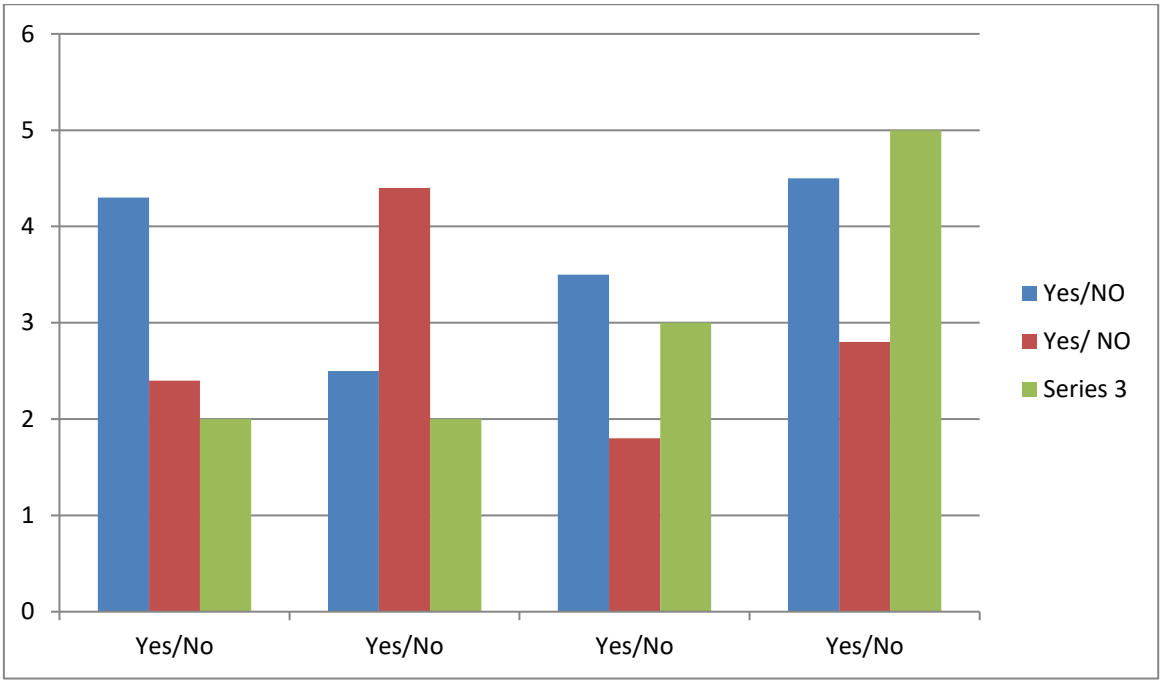

Figure 4.4.1: Respondent's response to sustainability performing statements

29% of respondents answered positively when they were asked whether they put criteria in contract documents to encourage the participation of local SME firms in the tendering process. Some response was observed in the case of putting deliberate criteria to enhance suppliers'/contractors' environmental performance like less carbon emission, fewer materials, consumption, and less air, water, and soil pollution. They normally do not ask contractors in contact documents whether they (contractors) follow respondents were asked whether they visit suppliers /contractors labour unfair wage, a human rights violation only 33% of respondents said yes, 8% of them answered positively about practising E-procurement in their procurement process to ensure transparency, promoting competitiveness and achieving value for money. The only hope is that 79% of respondents agreed that SLAA is promoting sustainable building design (to minimize future consumption of energy, water and maintenance services) SLAA is promoting sustainable building design by adding an environmental judge architectural plan.

When the respondents were asked about their perception of overall sustainability practice in procurement activity in SLAA, they responded as 46% over average, 29% average, and 25% below average, but in the case of overall sustainability practice in procurement activity in the public sector in Sierra Leone, the respondent is 8% average and 42% below average.

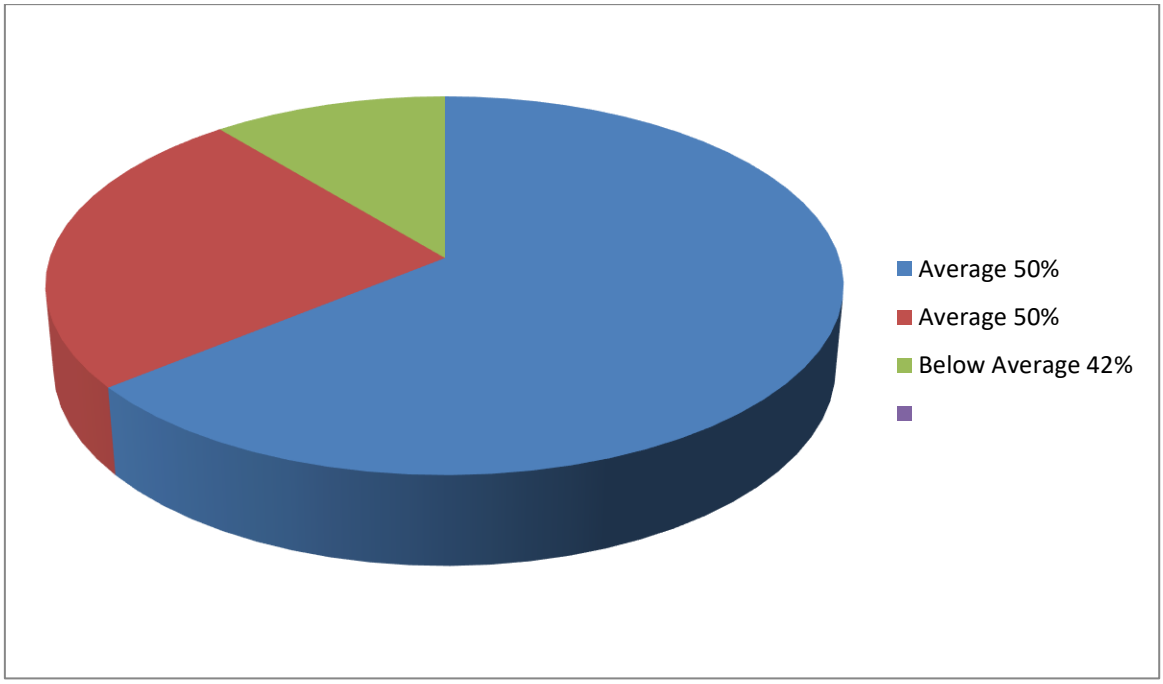

Figure 4.4.2: Sustainability practices in procurement in Sierra Leone

Then the respondents were asked for their perception of the barriers of sustainability practice in public procurement. They identified that lack of political will/commitment is the main barrier to implementing sustainability in public procurement. Then they ranked as lack of social drive/awareness. The barriers identified by them are shown below with relative scores.

Table 4.4.3: Barriers to sustainability practice in public procurement

S l	Barriers to sustainability practice in public procurement	Relative score (out of 10)
1	Lack of political will/commitment	7.83
2	Lack of social drive/awareness	7.75
3	Lack of organizational policy framework and practice.	7.71
4	Lack of expertise/ training of procurement professionals.	6.92
5	Lack of capacity of local suppliers.	6.83
6	PPA and PPR are inadequate to incorporate sustainability in procurement	6.63
7	Lack of product availability or sustainable alternatives	6.58
8	Avoiding the tendency of procurement professionals.	6.38

When the respondents were asked for the most feasible way of addressing sustainability in procurement decisions, they identified that specification formulation is the best way. Then they ranked the contract clauses are the suitable way. The ways through which sustainability can be incorporated in the procurement process are.

Table 4.4.4: Ways to incorporate sustainability in the procurement process

SI	Feasible ways to incorporate sustainability in the procurement process	Relative score (out of 10)
1	Specification formulation	8.17
2	Contract clauses	7.33
3	Pre-qualification criteria	7.21
4	Rigorous need assessment	7.04
5	Award criteria	6.92
6	Negotiation	6.00
7	Any other	1.08

5. Summary

As mentioned in the methodology, twenty-four procurement professionals have been interviewed with the objective of gathering their perceptions about sustainability issues and practices. To do this, the interview questions were divided into three parts.

The first part was about whether the participants had basic concepts of sustainable procurement or not. The analysis indicates that respondents have a fair idea of sustainability issues though a good number of them have confusion over different issues. But most of the respondents agree upon the importance of sustainability practices in Public Procurement in Sierra Leone. Most of the respondents have shown concerns about sustainability issues in their daily lives. So, it can be said that respondents are more or less conversant about sustainability issues but these may not be sufficient enough in introducing sustainability in public procurement.

The second part of the analysis was based on the preparedness of respondents to practice sustainability in their procurement activities. To do this, the interview questions were formulated addressing all three aspects of sustainable procurement those are economic, environmental and social aspects. The analysis shows that respondents are not prepared enough to exercise sustainability in their procurement activities. They don't have enough training on sustainable procurement. They have overall ideas but don't have clear and specific perceptions on different aspects of sustainability. They said that PPA-04 and PPR-06 are not sufficient enough to address sustainability in procurement.

In the third part, analysis was done on the level of sustainability practice by respondents as procurement professionals. The analysis shows that around three-fourths of the respondents do not consider practising sustainability in their procurement activities. They are not taking any measures or incorporating any clause in the contract document to ensure different aspects of sustainability are practised in procurement.

In the case of repair and maintenance work, issues like rigorous need assessment, sustainability consideration in the procurement process, and sustainable reuse of garbage and debris are almost equally important (45%, 30%, 25%) according to respondents' perceptions. So, respondents agreed upon the importance of sustainability in procurement. On the other hand, 80% of respondents say they are practising the lowest quoted price criteria as a contract which may not cover sustainability issues effectively.

The analyses done on the responses against the set questions indicate that although there are a few cases where some sustainability issues are in practice, these are not very common in the whole of the public sector, particularly in SLAA. The analysis made from the questionnaire gives a realistic picture of procurement practices in the public sector in Sierra Leone.

5.1 Suggestions

Economic factors have been the single most important indicator in the practice of public procurement. Environmental and social factors have always been neglected in the procurement system. Government in any country is the largest buyer, so, it is evident that what and how governments buy and acquire contribute significantly, both to its ability to deliver sustainable development and to its credibility with development partners. Public procurement, therefore, needs to consider sustainability issues seriously as it is the only way that ensure real value for money over a longer term without compromising environmental and social responsibilities. This would further ensure that development targets are achieved through the acquisition of goods, works and services without much damage to the society and the environment.

5.2 Way forward

Although sustainable procurement is an important issue in most of the developed countries, it has not become an important matter of concern in developing countries like Sierra Leone. However, it is a matter of hope that this issue is gaining acceptance in Sierra Leone which may be a potential driver for introducing sustainability in the public procurement for MDAs.

A clear commitment is necessary from the very top of government and down through the Ministries, Departments, Agencies, Authorities and Chief Executive Officials in all public sectors. Many public sector procurement professionals lack clear direction from the top of their organisations on the priority to be given to delivering sustainable development objectives through procurement. This should be dropped down through both government targets and performance management systems and progress monitoring. Education and training on sustainable procurement at the individual procurement professional level seem necessary in order to increase the knowledge base for implementing sustainable procurement.

As the formulation of a policy and including sustainability criteria in the documents are not enough to introduce a sustainable procurement system. It should be considered on a long-term basis. All procurement should be carried out by people whose procurement skills have been developed appropriately. Because sustainable procurement cannot be undertaken effectively unless procurement activities are carried out professionally and effectively, so, procurement should be done by the full-time procurement people.

Finally, there is scope to further study the sustainability issue. Till now, the concept of sustainable procurement has not been well embedded in the public

procurement system in Sierra Leone, and hence, this paper gives an overall scenario of sustainable procurement practices in the public sector in Sierra Leone through the eye of Sierra Leone Airport Authority (SLAA). Advanced research needs to be conducted in order to get a deeper insight into the sustainability issue in relation to public procurement and its implementation should be non-biased with potential corporations by all parties involved.

6. Research Limitation

The research is intended to investigate the impact of sustainable practices in public procurement in all MDAs in Sierra Leone. But due to the present economic and social conditions, the researcher limits the study based on the above restrictions, in Lungi (where the study area is located, the Sierra Leone Airport Authority) which is the mind focus on sustainable practices in public procurement. The research focuses on the SLAA located between land owners of Tintafor, Masoila, Kasongha, and Suctar, comprehensively known as Lungi, Portloko District, which comprises various departments.

Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Author(s)

Osman G. Kamara, Lecturer, Earnest Bai Koroma University of Science and Technology, Faculty of Business and Entrepreneurship. Have lectured in several higher institutions, including the University of Sierra Leone, University of Management and Technology (UNIMTECH) and Njala University, and have attained the rank of Head of Department. He holds a Master of Science Degree in Statistics, a Master of Science in Economics, and a Bachelor's Degree in Economics from Njala University, Sierra Leone. He has participated in many national and international surveys. He has been a researcher for over ten years now and has good experience in data collection, analysis, and reporting. He has been a World Bank consultant on project evaluation. He has experience with many software like SPSS, Excel, Eviews, STATA, Kobo Collect and more.

Foday Bassie Turay, Senior Lecturer University of Lunsar Faculty of Pure and Applied Science. A former lecturer at the University of Management and Technology (UNIMTECH). A PhD student at the Lagos State University in the Mathematics Department. He holds a Master of Science in Statistics, a Bachelor's Degree With honours in Environmental Science from Njala University, a Post Graduate Diploma in Education specialist in Mathematics Education from the University of Sierra Leone, and a certificate in Data Management and Demographics. He is an experienced Statistician/Researcher with more than eight years of experience in the field of survey design, data collection, analysis, and reporting. He has coordinated, managed, and been part of twenty (20) surveys and statistical activities with competence in mathematics, economic statistics,

econometrics, statistical computing, and programming. He is experienced in questionnaire design using CSPro, Access and Survey CTO, Google Form and Kobo Collect, and he has vast computer knowledge.

References

Brundtland Commission Report (1987). The Report of the U.N. Brundtland Commission, Our Common Future, 1987. Retrieved from https://www.are.admin.ch/are/en/home/media/publications/sustainable-development/brundtland-report.html

CIPS STUDY GUIDE, Sustainability in supply chain. Retrieved from https://www.cips.org/procurement-elearning/improving-supply-chain-sustainability

Blackburn, W. R. (2007). The Sustainability Handbook, Environmental Law Institute, Retrieved from https://books.google.ro/books/about/The_Sustainability_Handbook.html?id=qQy0pwYH_xsC&redir_esc=y

PPA (2004). Public Procurement Act, 2004.

PPR (2008). Public Procurement Rules, 2006.

UNGM (2011). United Nations Global Marketplace. Retrieved 09 October 2011 from http://www.ungm.org/sustainableprocurement/default.asp

Wikipedia: Retrieved 10 November 2011 from http://en.wikipedia.org/wiki/Procurement

World Bank (2002) Bangladesh: Country Procurement Assessment Report.

Burton, R. (2005). 'Improving Integrity in Public Procurement: The Role of Transparency and Accountability', in Fighting Corruption and Promoting Integrity in Public Procurement, OECD Publishing.

Sierra Leone Public Procurement Act, (2004). (Act 663). Republic of Sierra Leone. Freetown Sierra Leone Publishing Corporation.

Office of Government Commerce OGC (2005). Sustainable Procurement and Procurement Efficiency Implementation, Office of Government Commerce, [online], http://www.ogc.gov.uk

Public Procurement Board (2007). Procurement Planning, Short Term Training Manual on the Public Procurement Act, 2004 (Act 663), Manual, September 2006.

Jobber, D. (2007). *Principles and practice of marketing*, (5th ed.). Maidenhead, McGraw Hill

Whipple, J. M., & Russell, D. (2007). Building supply chain collaboration: a typology of collaborative approaches. *International Journal of Logistics Management, 18*(2), 174196.

de Man R, Burns T. R. (2006). Sustainability: supply chains, partner linkages, and new forms of self-regulation. *Human Systems Management 25*(1): 1–12.

European Commission (2004). Buying green! A handbook on environmental public procurement,

http://ec.europa.eu/environment/gpp/pdf/buying_green_handbook_en.pdf. accessed:13/03/14

Linton J. D., Klassen R., Jayaraman V. (2007). Sustainable supply chains: an introduction. *Journal of Operations Management 25*(6): 1075–1082.

Appendix: Research Questionnaire

Research Topic: An Evaluation on the Impact of Sustainability Practice in Public Procurement: A case of the Sierra Leone Airport Authority (SLAA).

This survey questionnaire is intended to perform academic research on "An evaluation on the impact of sustainability practice in public procurement" A case of the Sierra Leone Airport Authority (SLAA). It is a requirement for academic continuity in the faculty of Business and Entrepreneurship in general and specifically in the Department of Procurement, Logistics and Supply Chain Management of the Ernest Bai Koroma University of Science and Technology. Your honest response is valuable for the research. [The researcher does assure that the information given by you will be kept confidential and be used for academic purposes only]

Personal Data

1. Sex:

- Male
- Female

2. Age Group:

- 16-30yrs
- 31-45yrs
- 46-60yrs
- 61yrs and above

3. Position held: ……

4. Level of Education:

- Postgraduate
- Graduate Diploma
- Others Specify……

5. Your area of specialisation: ……

6. Job experience:

- 1-5yrs
- 6-10yrs
- 11-15yrs
- 16-20yrs, and
- Above 25yrs

Section A: General information & concept on sustainability

- Name: …….
- Designation & organisation: ……...
- Length of experience in procurement activity: ……. Years
- Approximate annual volume of procurement at your involvement: …….
- Approximate composition of your procurement portfolio: (total is 100%)
  Goods … ……% Works ……. % Services ……. %

6. Nature of works in procurement you are accounted for: (total is 100%)

- New Construction Work ……. %
- Repair/Maintenance Work ……...%
- All of the above ..... %

7. I understand sustainable procurement as - (please circle)

- conducting procurement activity efficiently and effectively
- Ensuring procurement with minimum cost.
- A process of meeting organisational needs in a way that achieves the best value for money on a whole-life basis whilst minimising damage to the environment and society.
- Any other else as……...

8. **I understand economic sustainability as - (please circle)**

- Profitability of an organisation
- Justifying the best value for money
- Considering the whole life cost of an activity
- Any other else as……...

9. I understand social sustainability as - (please circle)

- Addressing ethical issues
- Addressing labour aspects like workplace safety, fair wages, equality and diversity, etc
- Addressing community benefit & promoting SME
- All above

10. I understand environmental sustainability as - (please circle)

- Take care of the planet
- Extracting natural resources without degrading the environment
- Carrying out development activity in such a way that environmental pollution is minimum
- All of the above

11. What is the most important issue from a sustainability point of view for the construction of a new building? (please circle)

- Sustainability considerations in building design
- Sustainability considerations in the procurement process
- Sourcing construction material from sustainable sources
- Sustainability consideration is not important in developing countries like Sierra Leone

12. Which is the most important issue from a sustainability point of view for repair & and maintenance work? (please circle)

- Rigorous need assessment
- Sustainability considerations in the procurement process
- Sustainable re-use of garbage & debris
- Sustainability consideration is not important in developing countries like Sierra Leone

13. Which is the most critical building material from a sustainability point of view? Why? (please circle)

- Brick & aggregates due to
- Timber due to……
- Cement due to……...
- Steel/Iron due to……...
- Any other else……... due to……

14. Contract award criteria to responsive tenders that we follow is - (please circle)

- Lowest quoted price criteria
- MEAT (most economically advantageous tender) criteria
- Whole life cost (WLC)
- Any other else…….

15. Do you have sustainability practices in your daily life in the following cases?

	Always	**Sometimes**	**Not matter**
Turn off electrical switches after use			
Try to buy energy-saving electrical and IT appliances			
Try to use less water in daily activity			
Try to avoid using plastic bags			
Try to practice the 4R policy (Reduce, Re-use, Recycle, Rethink)			

Section B: Preparedness

16. Please indicate your degree of agreement for the following statements (strongly agree = 5, agree = 4, neutral = 3, disagree = 2, strongly disagree = 1)

No	Statements	Score
1	I have enough training and I am capable of conducting public procurement activity.	
2	I have enough training I am capable of conducting sustainable public procurement activity.	
3	I have a clear conception of the economic aspect of sustainability.	
4	I have a clear conception of the social aspect of sustainability.	
5	I have a clear conception of the environmental aspect of sustainability.	
6	consideration in the public procurement process is very important in developing economies like Sierra Leone	
7	I think PPA-04/16 and PPR-06 have addressed sustainability in the procurement process properly	
8	I think PPA-04 and PPR-06 have addressed social sustainability in the procurement process-	
9	I think PPA-04 and PPR-06 have addressed environmental sustainability in the procurement process.	
10	I think WAEC has been following the Environmental Management System (EMS) in their practice	
11	I think the itemised specifications of the SLAA schedule of rates address sustainability in procurement duly.	

Section C: Sustainability practice in procurement

17. Please respond to the following statements:

No	Statements	Yes	No	If yes please define
1	I can mention sections/articles from PPA-2004/PPR-06/STD that are addressing sustainability in procurement-			
2	I can mention measures that we are practising in our procurement process to ensure economic sustainability.			
3	I can mention measures that we are practising in our procurement process to ensure social sustainability.			
4	I can mention measures that we are practising in our procurement process to ensure environmental sustainability.			
5	I put criteria deliberately in the tender documents to encourage the participation of local SME firms.			
6	I put criteria deliberately in the tender document to enhance supplier's/contractors' environmental performance such as less carbon emission, and less material consumption.			

7	I put requirements for contractors in the tender document to have practised Environmental Management System (EMS).			
8	I think sustainable building design (to minimize future consumption of energy, water & and maintenance services) is promoted in the Public Works Department.			
9	I think construction materials used in building construction are being sourced from sustainable sources.			
10	I am practising E-procurement in our procurement process to ensure transparency, promote competitiveness & and achieve value for money.			
11	I visit our suppliers/contractor's plant/factory/workshop/office to verify the reality of child labour/forced labour/unfair wage/human rights violations.			

18. How will you rate sustainability practices in procurement activity in your procurement division? (please tick below)

- Very good
- Average
- Below average
- Very below

19. How will you rate sustainability practice in procurement activity in SLAA? (please tick below)

- Very good
- Average
- Below average
- Very below

20. How would you rate sustainability practices in procurement activity in the public sector in Sierra Leone? (please tick below)

- Very good
- Average
- Below average
- Very below

21. How would you rate it as the most feasible way of addressing sustainability in procurement decisions? (score 0 - 10 on the basis of suitability)

- Rigorous need assessment: ……...
- Specification formulation: ……
- Pre-qualification criteria: …….
- Award criteria contract clauses: …….
- Negotiation: …….
- Any other: ……

22. How will you rate the barriers to integrating sustainability in the procurement process? (score 0 - 10 on the basis of suitability)

- Lack of political will/commitment: ……
- Lack of social drive/awareness: ……...
- Lack of organisational policy framework & practice: …….
- Lack of expertise/ training of procurement professionals: ……
- Lack of capacity of local suppliers: ……
- Lack of product availability or sustainable alternatives: ……
- Avoiding the tendency of procurement professionals: …….
- PPA & PPR is inadequate to incorporate sustainability in procurement: ……