
Barriers to the implementation of environmentally sustainable procurement in public universities

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Abstract: Most public institutions are faced with numerous challenges in trying to implement environmentally sustainable procurement practices. This study examines barriers to successful implementation of environmentally sustainable procurement in public universities. Kwame Nkrumah University of Science and Technology (KNUST) was used as a case for the study. Semi-structured interviews with six procurement experts at KNUST procurement office was conducted. Data obtained was analysed using thematic template analysis. Findings from the study suggest that *inconsistencies in decision making; centralised/decentralised decision making; difficulty in imposing change; difficulty dealing with government agencies; collusion among stakeholders; lack of planning; lack of budgetary allocation; and inadequate training of procurement professionals and suppliers* are the eight key barriers that hinder the successful implementation of environmentally sustainable procurement in public universities. The findings should provide an enabling environment for measures to be put in place to successfully implement environmental sustainability in procurement activities.

Keywords: environmental sustainability; sustainable procurement; public procurement; public universities.

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1 Introduction

Sustainable procurement (SP) has become an issue of concern among many countries worldwide (Islam et al., 2016). The World Summit of Sustainable Development (2002) encouraged all relevant players at local, national and international levels to promote procurement policies that will encourage the diffusion of environmentally sustainable goods and services to promote recycling, sustainable construction and sustainable consumption (Islam et al., 2016). The European International Contractors (2004) classified SP as a means of sustainable development because of the impact of procurement policies and strategies on the environment, community, and the social and economic conditions of those delivering and receiving the product or service (Islam et al., 2016).

Many private and public institutions in the world link SP to certain environmental, economic and social factors which are considered during the decision to purchase. According to Islam et al. (2016, p.1), "this has portrayed the concept of sustainable development in a practical and feasible way." Despite this revelation, there is very little evidence of the implementation of such practices among most developing countries including Ghana.

Public sector expenditure has risen to a high level of 40% of gross domestic product in OECD countries (Hall, 2010), with 49.1% of GDP in 27 European countries (Eurostat,

2012). Government is therefore increasingly playing a role of being an active participant in all procurement activities as these activities are vital in the public sector. There have been various mechanisms put in place on procurement emanating from the public sector from a very long time dating back to the 20th century (Islam and Siwar, 2013). In the developing world, public procurement is considered a very significant activity because findings from several studies carried out in 106 developing countries indicated that government procurement is responsible for about 5.1% of total outputs (Evenett and Hoekman, 2005). This is an indication that opportunities exist for creating a market for sustainable products and services through public procurement (Hommen and Rolfstam, 2009; Edler and Georghiou, 2007). Sustainable public procurement can however not be carried out without giving full attention to the environmental sustainability aspect of the procurement.

Environmental sustainability can be defined as a condition of balance that allows human society to satisfy its needs while the capacity of supporting its ecosystems nor indulging in actions that would diminish biological diversity are not exceeded (Morelli, 2011). According to Aho et al. (2010), the environmental impacts associated with procurement practices are gradually being recognised as significantly influencing ecosystem quality and health. Public bodies across the world have an obligation to drive sustainable development and translate international policy goals into sustainable economic actions by ensuring that public sector funds are invested in sustainable goods and services (Watt, 2015). The use of manufactured goods and service provision impact directly and/or indirectly on a lot of the social and environmental needs at universities too, since the university is a sector known to be an institution providing service for the general public as well as a consumer with expertise when it comes to teaching and conducting of researches (Young et al., 2015).

In universities, most recent issues pertaining to supply chain has been disregarded as risk factors because of lack of private sector investors and their services provided. The fact is sustainability in procurement activities has not been given the needed attention by universities (Adams, 2013). From literature it is known that, not enough research has gone into procurement in the education sector with emphasis on universities. However, there are efforts made to throw more light on SP agenda for the benefit of all (Burt et al., 2006). This issue has become a necessary gap in literature which needs to be filled. This study therefore examines the barriers that hinder the implementation of environmentally SP in public universities.

2 Literature review

This section reviews literature on four key areas: sustainable development and procurement; sustainable public procurement; environmentally SP; and barriers to implementing environmentally SP.

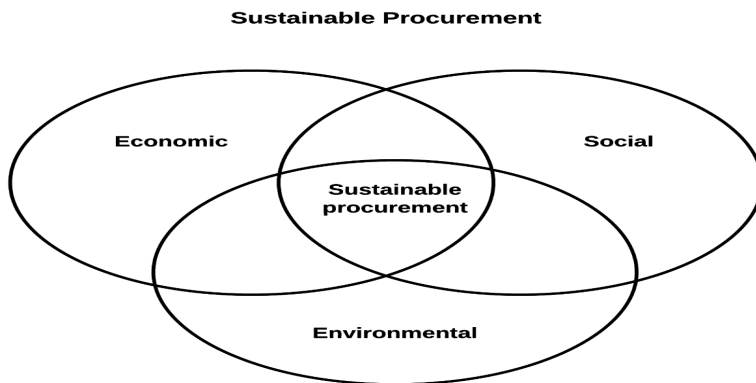
2.1 Sustainable development and procurement

In the Report of the World Commission on Environment and Development, ‘Our Common Future’ (1987) also known as the Brundtland Report, sustainable development was defined as “a development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” According to Montalbán et al.

(2017), this definition has been adopted by many researchers in various studies. The principles of sustainable development can be divided into three dimensions: economic, environmental and social (Figure 1). These three dimensions form the triple bottom line (TBL) of sustainability. To achieve and develop sustainability, maintaining balance between the three factors is crucial. The concept of TBL was first introduced by John Elkington in 1997, and since then it has been changing how businesses and organisations approach and measure sustainability.

Winter and Lasch (2016) stated that the triple-bottom-line departed from the standpoint that a development's success is not uniquely dependent on its financial condition, but also depends on social/ethical and environmental welfare. Research shows that the pillars of sustainable development are broad, however the concept is at its infantile stage and the fundamentals has to be tackled (Palmujoki et al., 2010).

Figure 1 Triple bottom line of sustainability



Source: Elkington (1998)

Procurement is defined as the process of acquiring goods, works and services, covering both acquisitions from third parties and from in-house providers (Montalbán et al., 2017; Sourani and Sohail, 2011). Kalubanga (2012) classified the procurement process as encompassing sourcing, contracting, monitoring and evaluation and expediting. The concept of SP originally surfaced at the UN World Summit on Sustainable Development in Johannesburg in 2002. SP includes environmental, social/cultural, planetary and financial considerations (Borland, 2009). It involves looking beyond traditional economic parameters and making decisions based on life-cycle costs, associated environmental and social risks and benefits as well as broader social and environmental implications. That is, SP refers to the act of integrating a concern for broader social and environmental impacts within procurement undertaken by government or public sector bodies (Preuss, 2009; Walker and Brammer, 2009). It is a term that is used to “represent the bidding process that incorporates environmental and social aspects in all procurement stages in order to reduce impacts on human health, the environment and human rights” [de Souza Dutra et al., (2017), p.3]. Kalubanga (2012) indicated that SP builds on the traditional procurement practice which seeks to extend through the adoption of sustainability principles. The West Dunbartonshire Council, WDC (2014) in its corporate procurement strategy indicated that SP goals include ensuring a lasting value for money; avoidance and/or reduction in negative environmental impacts; delivery of social and economic

benefits locally; lower emissions and air pollution levels from sustainable transportation usage; and less waste going to landfills. From the view point of Naoum and Egbu (2016), SP should generate benefits for the organisation, society and the economy, minimise environmental impact and generate value for money in whole life cycle basis.

2.2 Sustainable public procurement

Procurement is of significance to key stakeholders (practitioners, researchers and policy makers) in any country (Offei et al., 2016). Every comprehensive procurement system should ensure that good quality materials, items and services are economically bought from reliable sources, ensures timely delivery through the selection of capable and efficient suppliers, locate and evaluate economical and reliable sources of supply (Atiga and Azanlerigu, 2017). Public procurement is at the forefront of most reformation efforts because it plays a significant role in the promotion of accountability and transparency (Larbi et al., 2019; Baiden et al., 2015). Public sectors have important roles to play in the sustainable development of their countries. Their most powerful tool to achieve this is to control their spending power which can influence numerous sectors including the private sector (Butler and Keaveney, 2014). In Ghana public procurement has direct impact on the successful delivery of government projects, hence, improving public sector procurement system can directly impact the overall economy of the nation (Atiga and Azanlerigu, 2017). Public procurement affects production and consumption trends, while at the same time creating substantial demand for sustainable products and services (Butler and Keaveney, 2014).

According to Delmonico et al. (2017) discussions on SP has and is still in existence and began with analysis of the relationship between the public and private sectors. Several investigations have been conducted in this area. For instance, Alancastro et al. (2014) examined SP in the Brazilian public administration, Couto and Coelho (2015) examined the critical factors in the behaviour of public managers responsible for SP. Couto and Ribeiro (2016) further outlined the objectives and challenges of the sustainable public procurement policy in Brazil, among other things. Other researchers have also contributed their quota to various studies on sustainable public procurement in diverse ways (Kusi-Frimpong and Sarkis, 2017; Ho et al., 2010).

Bouwer et al. (2005) iterated that “sustainable public procurement requires public authorities to integrate environmental criteria into all stages of their procurement process, thus encouraging the spread of environmental technologies and the development of environmentally sound products by seeking and choosing outcomes and solutions that have least possible impact on the environment throughout their whole life-cycle.” Section 2.3 is dedicated to explaining in detail the concept of environmentally SP.

2.3 Environmentally sustainable procurement

It has been buttressed by Du Plessis (2002) that environmental sustainability is foundational to the achievement of the other pillars of sustainability. If one looks at the development of environmental impairment, one has to realise that it is neither major accidental pollution nor manifestly erroneous decisions on a development or infrastructure project which constitute the real environmental problem, but rather the numerous day-to-day decisions which lead to environmental impairment (Krämer, 2015) According to Butler and Keaveney (2014), there is a commitment to environmental

protection and sustainable development within the public sector. This can lead to the environmental image of a local authority becoming a sustainable public procurement driver because more public and private consumers are able to take into consideration the environmental footprint of products and services (Butler and Keaveney, 2014). Protection of the environment through public procurement constitutes the first essential dimension of SP (Kaya, 2014). Sharma et al. (2010) identified three major approaches in the achievement of environmental sustainability objectives regarding internal drivers: reduction of surplus supply of products, reduction of reverse supply and internal marketing play a key role in the supply chain for achieving sustainability objectives.

Uttam and Roos (2015, p.404) indicated that in sustainable public procurement, “environmental technologies are procured when a public body asks for outcomes and solutions that prevent, reduce, manage and treat pollution and the environmental impact of a product, activity and process throughout their whole lifecycle.” Bouwer et al. (2005) stipulated that these technologies improve an organisation’s competitiveness and provide solutions for the sustainable growth of the public and private markets. In summary, Evans et al. (2010) indicated that the fundamental concept of sustainable public procurement is based on establishing environmental criteria for products and services. The practice of environmental sustainability in public procurement has not been fully achieved because of some challenges faced in its implementation. Sub section 2.4 expatiates on some of the challenges reported worldwide in the implementation of environmentally SP.

2.4 Barriers to implementing environmentally sustainable procurement

There have been reported studies on the potential benefits associated with environmentally SP among public institutions. However, there is still a worldwide debate concerning the challenges associated with its uptake (Montalbán et al., 2017). Though sustainable ways of procuring things have become increasingly important to consumers, both public and private institutions, especially in Africa are still slow to institutionalise them. Literature further identifies considerable barriers to the development, adoption, and implementation of SP practices, and indicates that such barriers vary across countries, organisations and sectors (Islam et al., 2016). Adham and Siwar (2012) postulated that the challenges that influence the implementation of sustainable public procurement in one country might differ from another country, probably because of the socio-economic, demographic and cultural differences of such countries.

Among the barriers to the implementation of environmentally SP reported in literature are the following: In Spain, lack of awareness and knowledge, policies, regulations and incentives, insufficient/confusing guidance, tools and indicators, lack of improvement in organisations and management factors, financial issues, bid evaluation and analysis of the sustainable benefits were identified (Montalbán et al., 2017); in the Netherlands, higher upfront capital cost of more environmentally sustainable products and services, poor choice of environmentally friendly products and services, lack of methods to compare environmental credentials of greener goods and services, and resistance to change in procurement procedures were identified (Butler and Keaveney, 2014); in the UK, Eastern and Western Europe, the USA and Canada, perceived cost or financial constraints, was identified as the most significant barrier to environmentally SP (Blair and Wrigh, 2012; Brammer and Walker, 2011); in Brazil, de Souza Dutra et al. (2017) identified higher costs, insufficient or non-existent public policies and government

incentives, inadequate legislation and procedures, need for training or technical guidance, ineffective and excessive controls and punishments, slowness in the analysis of licensing procedures and difficult access to technologies and more sustainable products to be the key barriers to the implementation of environmentally sustainable public procurement.

The European Commission (2009) also established other barriers to include: having limited established environmental criteria; insufficient information on life-cycle costing of products and the relative costs of environmentally friendly products and services; low awareness of benefits of environmentally friendly products and services; uncertainty about legal possibilities to include environmental criteria in tender documents; the lack of political support; the lack of coordinated exchange of best practice and information.

3 Research method

3.1 Approach/strategy

This research followed a qualitative approach, as it systematically worked to solve the research problem and achieve the research aim, which is to identify the barriers to the implementation of environmentally SP in public institutions. This approach was deemed appropriate because research into environmentally SP at public universities is not yet profound, hence, a more invitational, open-ended question options had the tendency to provide relevant information on which future studies in the area could be built on. Also, the Kwame Nkrumah University of Science and Technology, KNUST, was selected as the case for the study. This institution was selected because of the readiness and willingness of respondents to partake in this exercise.

3.2 Design of interview guide

Face-to-face interviews were organised around semi-structured interview guides. The interview guide was made up of two specific sections, of one question each. In all two major questions were posed to the respondents, one on their demographics and the other on the barriers that affect the implementation of environmentally SP. In addition to the literature review which laid the foundation for the development of the interview guide, a two-step procedure was followed to assess the appropriateness and rationality of the interview guide. A content validity test was first conducted using two personalities in the area of procurement with in-depth knowledge about SP. The comments from the professionals helped in revising any of the questions that were not clear. Based on the revision, a much modified version of the interview guide was arrived at and further administered to the proposed respondents. The interview guide was given to the various respondents with an accompanying letter detailing the purpose of the study. The interview guide was given to the respondents three weeks ahead of the planned interview schedule so as to offer them the quality time to brainstorm and provide relevant answers.

3.3 Conducting interviews

A census sampling approach was used in this study. To ascertain in-depth knowledge on procurement practices in the institution, the study considered six key procurement experts at the university's procurement unit. These key professionals included the end-user

departments represented by the IT Consultant and the Mechanical Engineer and the Chairman of the tender evaluation committee. The respondents were asked to answer questions pertaining to: what they thought were the factors that hindered the implementation of environmental sustainability in their procurement activities.

3.4 Analysis of data

Several analytical tools such as content analysis, grounded theory, data matrix analysis and thematic analysis exist for researchers to use to analyse qualitative data (King, 2004). This study used thematic analysis to analyse data within the specific themes in view of the meanings attributed to the themes. The data was analysed by coding using Nvivo 11 software. Nvivo software was used because it is an effective manager of text as well as analysis. Coding is the process of gathering data by themes or cases in Nvivo. Data obtained from the interview was analysed using the procedure outlined: the recorded data in a form of audio was transcribed using MS Word 2017; each of the interviews with the professional bodies were transcribed separately in a word document and saved in their respective names; the transcribed data were cross-checked with the audio recordings to ensure that they were exactly the same as the audio recordings from the interview; the transcribed data were imported into the Nvivo 11 Pro; deductive approach of thematic analysis was used; the themes in the interview guide were coded in new nodes. Node allowed the researchers to gather related materials for emerging patterns and ideas; responses from all the interviewees were grouped under their respective themes or nodes; the responses under each node (themes) were coded separately and analysed; and the coded data were discussed and supported with literature in order to give meaning to the results. The results of the analysis formed the basis for identifying the barriers to the implementation of environmental sustainability in public universities.

4 Results and discussion

The vision of KNUST is 'Advancing knowledge in Science and Technology for sustainable development in Africa'. The institution desires to implement this vision in all departments especially procurement. This is also in line with the amended public procurement (Act 914), which suggests that all public institutions should inculcate sustainability issues in their procurement (Public Procurement Authority). This section presents and discusses the findings, and it is presented in two parts to include the demography of the respondents and identifying the barriers to the implementation of environmentally SP.

4.1 Demography of respondents

Table 1 shows the detailed background of interviewees. For the purpose of anonymity, the names of interviewees are represented with codes; B1, B2, B3, B4, B5 and B6. Table 1 further shows that all participants are key procurement experts who have been involved in the procurement activities of the university for various years, with the years of experiences spanning from 7 to over 15 years. The experiences of respondents indicate the in-depth knowledge and the level of involvement in environmentally SP activities in

the university. Moreover, the interviewees were willing to take part in the research. This is an indication that there was quality and adequacy in information given hence reliable for analysis.

Table 1 Demography of interviewees

<i>Interviewee (code)</i>	<i>Position</i>	<i>Years of ESP experience</i>	<i>Willingness to partake in study</i>
B1	Chairman of tender evaluation committee	More than 15 years	Willing
B2	IT consultant	More than 10years	Willing
B3	Mechanical engineer	9 years	Willing
B4	Expert 1 at procurement unit	11 years	Willing
B5	Expert 2 at procurement unit	9 years	Willing
B6	Expert 3 at procurement unit	7years	Willing

4.2 *Barriers to the implementation of environmentally sustainable procurement*

The study sought to identify barriers that hinder the implementation of environmentally SP in public institutions. The barriers identified were specific to procurement in public universities. The respondents interviewed indicated that certain barriers (extracted into eight themes after the analysis) were prevalent in hindering the implementation of environmentally SP in public universities. The specific barriers listed by the respondents include: *inconsistencies in decision making; centralised/decentralised decision making; difficulty in imposing change; difficulty dealing with government agencies; collusion among stakeholders; lack of planning; lack of budgetary allocation; and inadequate training of procurement professionals and suppliers*. The verbatim responses of the respondents are further presented under each barrier listed to include.

4.2.1 *Inconsistencies in decision-making*

Procurement procedures involve decision processes. The procuring authority has the mandate to compare proposals submitted in response to a contract notice against pre-set criteria and can either choose one or reject all of them (Csaba, 2006). Until recently, procuring authorities focused their initiatives basically on price, quality and time. However, the dynamics of current procurement practice has introduced a fourth dimension, i.e., sustainability (Kalubanga, 2012). The procuring authority is therefore supposed to ensure that every decision made is consistent with the requirements needed. However, in Ghana, this issue seems not to be so. Most of the procurement activities undertaken are done in the absence of the fourth dimension that is the sustainability aspect, though the Procurement Act clearly stipulates that to be done. In view of this some of the respondents gave a typical scenario where there have been inconsistencies in the decision made by the procuring authority by indicating that:

“Take for instance the procurement of IT equipment, all end-user departments are to submit their requests with attached specifications before the Procurement unit procures the item needed. This has created some inconsistencies in the specification of similar products. Although the specifications of products are

often referred to the IT Consultant, the end-user departments do not always agree with the Consultants advice.” (Interviewees B1, B3 and B4).

The respondents indicated that in most cases the products which they specify are environmentally friendly. However, the procuring authority delivers their order only to realise that most of their specifications are not met.

“Such inconsistencies have the tendency to spark riots between the receiving department and the procurement office.” (Interviewee B5)

“This problem normally comes about because of the difficulty in inserting environmental issues in bids.” (Interviewee B6)

4.2.2 Centralised/decentralised decision-making

Another barrier which was also spoken about by a respondent is the centralised/decentralised decision making in public universities in Ghana.

“Another difficulty is devolved procurement, everybody in colleges and departments actually purchase themselves if it’s within their threshold and without advice from the centralized procurement unit. It is very difficult to standardize and pull centrally together your policy.” (Interviewee B1)

A procuring authority can ensure that “all bidding processes incorporate environmental and other aspects of sustainability in all stages of procurement in order to reduce impacts on human health, the environment and human rights.” When there is a centralised/decentralised decision making, this objective becomes quite difficult to implement, especially, in public universities with many different colleges and schools. In this regard the issue of ethics plays a very important role because if the procurement officer representing the procuring authority in that college or school in the university is unethical, it will be difficult to achieve such an objective. Young et al. (2015) in his study indicated that the decentralised budgets in public institutions make it difficult for SP to be achieved.

4.2.3 Difficulty in imposing change

Sustainability requires innovation, therefore subjected to change. Change does not come by easily whenever an initiative is propounded to be used. All interviewees clearly indicated that ensuring environmental sustainability in procurement activities in public institutions is difficult to achieve because of the special interests of some authorities. According to the respondents, for this to be possible, it is important to get on board senior university staff or senior managers such as finance directors to buy into the idea. Some of the respondents further indicated some of the measures which they are putting in place to ensure that this hurdle is crossed.

“We are trying to institute training courses, workshops where we look at strategies to involve managers at the senior level and the various ways by which it can be done.” (Interviewees B2 and B1)

According to Butler and Keaveney (2014), within the public sector there should be a commitment to environmental protection and sustainable development. This can lead to a local procuring authority becoming a sustainable public procurement driver as more public and private consumers are encouraged to take into consideration the environmental

footprint of products and services (Butler and Keaveney, 2014). With proper education, it is possible for environmental sustainability to be achieved in all public procurement activities. Some countries have spearheaded this change and it is possible to do so in the public institutions in Ghana. For instance, O'Rourke (2014) indicated that in 2009 Malta completed the construction of their first energy self-sufficient school where sustainable public procurement was implemented during the tendering stage.

4.2.4 Inadequate training of procurement professionals and suppliers

Training is generally required for procurement professionals and suppliers on relevant aspects of environmentally SP implementation (Green Public Procurement in Europe 2006).

Respondents identified inadequate training of procurement professionals and suppliers to be a key barrier to the implementation of environmentally sustainable public procurement. Therefore, procurement professionals and suppliers engaged in the procurement process should be provided with the appropriate training. According to some of the respondents they acknowledge this barrier and efforts are being made to overcome it. Some of the views shared include:

“The Public Procurement Authority organizes training sessions for us procurement professionals annually in Accra, the capital of Ghana. But sometimes it is difficult for us to attend because of the centralized nature of the training sessions. It would be better for the Authority to organize training sessions in all regions to enhance our cooperation.” (Interviewee B1).

“One of the challenges we face is that suppliers do not have knowledge about what is required of them. The university procurement is supposed to include sustainable issues in them, so we have now organized our first workshop for our suppliers. The workshop is to train them on their role in implementing environmentally sustainable procurement.” (Interviewees B4 and B5)

Public procurement can affect production and consumption trends and at the same time create substantial demand for more sustainable products and services (Butler and Keaveney, 2014). The increased demand for such procurement practice will enlarge markets for environmentally friendly products and services.

4.2.5 Lack of budgetary allocation

The inclusion of sustainability issues in budgets can be problematic. When using environmental sustainability to procurement procedures, most often, the purchasing cost is initially high, the total cost is subjected to reduce since the price on purchases are compensated by disposal cost. It is difficult to inculcate in already existing budgets. This is what the respondents had to say:

“When it comes to budgetary allocation, most often the short-term goal of procuring goods is always considered. It would have been better if the long-term goals of procurement are duly recognized and budgeted for.” (Interviewee B5)

“Budgets are not flexible, and it becomes difficult to introduce new considerations such as allocating money for sustainable issues in procurement.” (Interviewees B6, B5 and B2)

“It is sometimes difficult to control budget overruns, this is because the colleges and departments in the university overspend in expectation of income in upcoming semesters. There is always a budget deficit and it becomes difficult to plan procurement taking into consideration sustainable issues.” (Interviewee B1).

The UN Procurement guide affirms the process involved in procurement is expensive and time consuming. This goes contrary to the objectives of getting goods at the possibly lowest price by working within the budget (Lyons and Farrington, 2006). A study by Ameyaw et al. (2012) in Ghana found out that lack of funds was a challenge in implementing environmentally SP.

4.2.6 Difficulty in dealing with government agencies

It is essential to keep good personal relationship with officers in government agencies as the absence of coordination between procuring authorities and state agencies makes it difficult to implement environmentally SP. Respondents recognised difficulty in dealing with government agencies as a key barrier, and indicated that:

“In order for us to implement environmentally sustainable procurement, we have to rely on government agencies such as Standards Board and the Environmental Protection Agency (EPA). The EPA is responsible for issuing Environmental certificates to suppliers before they bid for some items but unfortunately suppliers must pay money to get the certificate. We believe that when this happens, some suppliers will get their certificates without proper assessment by the agency.” (Interviewees B4, B6 and B3)

Roman (2017) indicated that the implementation of SP is quite challenging both technically and politically. According to Iles and Ryall (2016), political factors and inadequate supportive legislative mandates at the local, state and national levels significantly affects the development of a favourable framework for adopting and promoting sustainable practices. The response given by the respondent affirms European Commission (2006) assertion that most public institutions find it quite difficult to act on their intuitional mandates when it comes to the implementation of such acts. Hence, there is the need for both informal and formal cooperation between government agencies and procuring authorities in order to enhance sustainable public procurement.

4.2.7 Collusion among stakeholders

Collusion is a consensus between two parties, most at times not in conformance with the law and not made known to a third party, to limit open competition by misleading others. This factor has emerged as a new barrier to implementing environmentally SP in public institutions. According to the respondents:

“One challenge we face has to do with collusion. It will surprise you that some end-user departments have suppliers they always want to procure from by the time they even bring a request for quotation for goods they want to procure.” (Interviewees B1 and B4)

“There exists some conspiracy between suppliers, consultants and some procurement unit staff. It is very difficult to even get to know the culprits. It becomes difficult to go against such decisions at the tender evaluation because some people have their own interests in the procurement.” (Interviewees B1 and B6).

In bid evaluations, there should be objective methods to assess SP. According to Ruparathan and Hewage (2015), most of the time, the current bid evaluation methods overlook lifecycle perspective of projects and solely focus on initial cost. Montalbán et al. (2017) therefore asserted that if this happens there could be open opportunities for mismanagement, corruption and fraud to occur. There could also be a deviation between both the qualitative and quantitative analysis for the benefits of using SP (Montalbán et al., 2017). This is so because most suppliers may not have an appropriate approach to measure and achieve SP benefit.

Collusion among stakeholders is not only a challenge in Ghana but other parts of the world as well. Tas (2017) indicated that collusive agreements among firms limit competition and artificially increase procurement prices above competitive levels. Although governments may substantially benefit from detecting deterring collusion in public procurement auctions, policy makers still face many challenges in implementing such methods (Tas, 2017). According to Tas (2017), there is inadequate information available to implement the methods to control the menace, especially in developing countries. As this factor has been identified as a key barrier, government agencies are encouraged to propose and implement a collusion detection methodology to control the menace.

4.2.8 Lack of planning

Planning is very crucial in enhancing environmentally SP. All Procurement Entities are mandated by law to prepare and submit procurement plans yearly and abide by it. However, the respondents are of the view that lack of planning is a critical barrier that demand close attention. This is what the respondents had to say about this barrier:

“The end-user departments submit their procurement plans to the procurement unit which is inculcated into the university procurement plan. The procurement plans inform the procurement unit of the needs of the end – user department. But the challenge is that most end-user departments do not go strictly with the procurement. This puts the unit under pressure to quickly procure items which have not been planned for.” (Interviewee B5)

From the views of the respondents, there is no clear strategic goals on the part of both the procurement unit and the end-users. Decisions are always required on the sustainable outcome which a procurement process seeks to achieve. Several analyses performed to achieve this include SP risk assessment, supply market analysis, stakeholder analysis and demand analysis (UN Procurement Practitioner’s Hand Book, 2006). The type of analysis that is incorporated into the decision depends on the sustainability issues that may be affected by the procurement action (UN Procurement Practitioner’s Hand Book, 2006). This therefore implies that to be able to achieve sustainable public procurement there must be a clear strategic goal on the part of all parties involved. According to Ahsan and Rahman (2017), managers responsible for procurement must be sufficiently informed about the objectives of SP. If this information is not supplied, there is the tendency that sustainability will not be achieved. Evidence suggest that organisations without clear goals on sustainability failed to reap the benefits of implementing SP (Ahsan and Rahman, 2017).

5 Conclusions and recommendations

Though the concept of SP is becoming widely accepted and practiced both in the public as well as the private sectors, it is still relatively new since it only emerged in the mid-1990s. This makes it an approach under constant development. Though the limited literature available on SP in public institutions is tailored at environmental aspects, little is known of the implementation of environmentally SP in public universities in Africa, especially in Ghana. This study was therefore undertaken to examine the barriers to the implementation of environmentally SP in public universities. The main findings from this study suggests that eight barriers are key. These barriers were identified as *inconsistencies in decision making; centralised/decentralised decision making; difficulty in imposing change; difficulty dealing with government agencies; collusion among stakeholders; lack of planning; lack of budgetary allocation; and inadequate training of procurement professionals and suppliers*. The main implications of this study suggest a potential future focus for both practitioners and researchers. For researchers, future research direction could be skewed towards identifying appropriate measures that can control the identified barriers. Also, the barriers identified were only listed by the respondents, making it difficult to tell which one needs urgent attention. Future studies could further look at prioritising the barriers through a quantitative approach. This will make it easier to tell the critical areas that need urgent attention to ensure the smooth implementation of environmentally SP in public universities. For policy makers aiming at enforcing existing regulations to ensure a more SP, these identified barriers should assist in identifying and bridging the gaps within such regulations. Once this is done, a complete enforcement of such regulations could enhance the institutional changes that need to be put in place to ensure that environmental sustainability is achieved in public procurement. Again, once this is done, policymakers should be ready to introduce tax subsidies on environmentally sustainable products which would create the needed markets for such products. Also, whole life costing concept could be considered in procurement decisions in order to implement environmental sustainability. SP principles could also be based on requirements or a policy rather than a voluntary action since it is difficult to enforce sustainability criteria in the absence of a policy. Since in Ghana, most public universities are semi-autonomous, such institutions could be allowed to have their own procurement policies, which are not totally out of line from the national procurement policy. This will assist in checking some of the barriers, especially, that of collusion. Finally, in Ghana and in many developing countries, cost price is still a major selection criterion. However, rather than considering the cost of an initial investment, the total price of ownership, including maintenance and end of life scenarios should be considered in the Cradle-to-Cradle concept. The identified barriers should provide an enabling environment for measures to be put in place to successfully implement environmental sustainability in procurement activities to protect the environment and to save cost.

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