

Literature Review on Effect of Adoption of Green Procurement Practices on Effective Procurement Management in the Public Sector

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Abstract: Today, the world is grappling with the effects of global warming and the resultant climate change. These effects threaten lives and livelihoods at a gigantic scale. Research indicates that should climate change continue unabated, the live supporting systems on earth will be depleted. These include clean water supplies, clean air and soils able to support agriculture among others. Without these systems, it is difficult to imagine of human or any other life on earth. Environmental conservation and preservation measures have however been shown to halt and reverse global warming. Practices such as reforestation, afforestation, management of water resources, reducing natural resource use, reuse of natural resources, use of green energy and recycling are known to conserve the environment and reverse global warming. Governments, organizations and individuals have a role to play in reducing global warming. Beyond the regulatory role that governments have in environmental conservation, their daily operations can also have a significant impact in checking environmental degradation. Among the most effective operations in environmental conservation is public procurement. Public procurement has the dual effect of bringing environmentally friendly inputs in to the public production process as well as encouraging organizations and individuals in their supply chain to adopt green. This is then cascaded down by the suppliers, compounding the green effect in the economy. The challenge is weather by adopting green procurement practices; public institutions would compromise effective procurement management. Important considerations such as cost effectiveness, timely availability of supplies, high quality inputs among others might be effected by green procurement. In many countries, especially in the developing countries, such considerations take precedence over environmental conservation. It is therefore important to consider the effect of adopting green on these considerations of effective procurement. Several theories form the basis for this review. These include the stakeholder theory, the natural resource base theory, the economic approach theory, the innovation theory, the contingency approach theory and the institutional sociology theory. This paper reviews literature on the subject and establishes that adoption of green procurement has an effect on indicators such as cost, quality and lead time, which are all key in procurement management. The effect is either positive or negative in the short and long run. This is important because indicators that enable managers to effectively run the procurement function motivate them to adopt green while those that do not hinder them. In absence of policy directions on green procurement, it becomes impractical for the managers to adopt green, especially when it negatively affects some indicators of procurement management.

Keywords: Adoption of green, environmental degradation, global warming, public procurement management, risk, productivity

Date of Submission: 14-08-2017

Date of acceptance: 17-08-2017

I. Introduction

There is an ongoing debate regarding the effectiveness of various environmental practices designed to meet the complex and conflicting environmental pressures from various sources in improving the competitiveness of firms. This debate has received a growing attention in recent years among researchers and management practitioners. Specifically, much attention has been given to the ability of such practices in enabling firms to achieve adequate levels of environmental and economic performances (Zeng et al., 2010; Zhu et al., 2012). Firms, both private and public are under immense pressure to reduce their negative impacts on the natural environment (Wanjohi, 2016). There are legal requirements to be met, concerns of customers and local host communities to be considered, image to be maintained and new environmental conscious markets to be exploited. The pressure is more on public organizations who are expected to set pace on matters of public interest.

To lead and be effective in environmental management, public organizations must align their processes for the environment. Among the most important process in any organization is procurement. In most

institutions, up to 70% of annual budgets go to procurement. It is also possible to identify what is important and what is planned to a firm by analyzing its procurement (Sumeet, et al, 2015).

II. Procurement

The Chartered Institute of Procurement and Supplies Australia (CIPS, 2017) defines procurement as the business management function that ensures identification, sourcing, access and management of the external resources that an organisation needs or may need to fulfill its strategic objectives. Procurement exists to explore supply market opportunities and to implement resourcing strategies that deliver the best possible supply outcome to the organisation, its stakeholders and customers. Procurement applies the science and art of external resource and supply management through a body of knowledge interpreted by competent practitioners and professionals (Madaan & Mangla, 2015). Procurement is wide and covers the complete range of events from the identification of a need for a good or service through to its disposal or cessation or end life.

Weele, (2010) says that procurement is the act of obtaining or buying goods and services. The process includes preparation and processing of a demand as well as the end receipt and approval of payment. It often involves; purchase planning, Standards determination, specifications development, supplier research and selection, value analysis, financing, price negotiation, making the purchase, supply contract administration, inventory control and stores, and disposals and other related functions. The process of procurement is often part of a company's strategy because the ability to purchase certain materials will determine level of operations and competitiveness.

Public procurement

The United Nations viewed public procurement as an “overall process of acquiring goods, civil works and services which includes all functions from the identification of needs, selection and solicitation of sources, preparation and award of contract, and all phases of contract administration through the end of a services’ contract or the useful life of an asset” (United Nations Development Programme, UNDP, 2007). Although procurement process is the heart of a sound procurement system (Harink, 1999), public procurement, according to Harink (1999), involves more than the procurement process alone and it should not only consist of supporting, but also “important components” including strategy and policy of the organization, methods and procedures, personnel and organization, and information. In the last decade, several authors and organizations have suggested conceptual procurement models.

Public procurement is one of many government functions, and the procurement system can be prescribed in the national constitution (like in South Africa where the public procurement is provided in its constitution), or determined through procurement laws and regulations and through policy and budget decisions by legislators and the executive branch as is the case in Kenya. In a unitary system like Kenya, the central government exercises various levels of control over county governments. County government procurement structure and process borrow heavily from the national government.

Public procurement is continuing to evolve both conceptually and organizationally. Public procurement professionals have faced a constantly changing environment typified by rapidly emerging technologies, increasing product choice, environment concerns, and the complexities of international and regional trading agreements. Further, policy makers have increasingly used public procurement as a tool to achieve socioeconomic goals. These include environmental conservation.

In countries like Kenya though, green procurement is not given guidelines and prominence through policy directions. The weight given to green considerations in procurement process is often left at the whims of the practitioners. These practitioners must balance between the need to adopt green and meeting performance requirements, which often do not include green adoption. In Kenya, the Performance Management in the Public Service is anchored in the National Economic Blue Prints. The current is Kenya Vision 2030 and the proceeding was known as Economic Recovery Strategy (ERS) for Wealth creation and Employment (Ondongo & Wang, 2017).

Adoption of green procurement practices

According to Fahimnia, Sarkis, and Davarzani (2015) increased deterioration of the environment has raised concerns amongst various researchers and academicians. Green procurement is a part of the green supply chain management. Green supply chain management is expressed as the addition of environmental contemplation in the business. It has been stated as a useful measure to increase the ecological performance of the enterprise and to reduce the environmental risks (Mangla, Kumar & Barua, 2014). According to Nderitu, & Ngugi, (2014). Green procurement is also known as the sustainable procurement, and some companies realized a long time efficiency in energy usage, waste generation and water consumption along with use of recycled materials resulted in reducing costs (Victor & John, 2009).

Problem statement

According to Kaumbuthu, (2016), pressure from consumers, and other stakeholders' points to the issues of environmental procurement as being a critical function to most government institutions. Several government departments and state corporations have taken the initiative to spearhead the green public procurement. This has been as a result of several factors, ranging from realization of effects of climate change, public concern, legal obligation as well as a donor requirement. Available evidence alluded to earlier does indicate that there is adoption of green procurement in the public sector. The adoption is either intended or a consequence of requirements for funding, partnership or civil society and citizens' pressure (Wanjohi, 2016). What is not clear though is whether the adoption affects effective management of the important procurement function. The function only contributes to the overall organizational performance by contributing to effectiveness and efficiency of operations, production cost reduction, improving organizational image among others. Procurement managers channel their efforts to the achievement of the above performance indicators. In assessing whether adoption of green procurement practices affect procurement function management; we assess literature on how green practices impact the said performance indicators.

III. Theoretical Review

Several theories form the basis for this review. The theories are discussed below.

Stakeholder theory

According to Freeman (2014b), a stakeholder is any group or individual who can affect or is affected by the achievement of the organization's objectives. Miles (2006) states that the organization itself should be thought of as grouping of stakeholders and the purpose of the organization should be to manage their interests, needs and viewpoints. Freeman (2014a) defines stakeholders as those groups who are vital to the survival and success of the corporation.

The theory is in part concerned with the influence of a wide range of actors in an organization's environment on organizational performance as many researchers have argued (Donaldson & Preston, 2005; Freeman, 2014; Quin & Thomas, 1995; Mitchell *et al.*, 1997). Unlike traditional input-output models of organization performance, stakeholder theory emphasizes the interaction between interest groups such as the organization's employees, members of the social community, shareholders, and other allied organizations, in determining organization performance.

Some stakeholders identified by Friedman and Miles (2006) include, customers, employees, local communities, suppliers and distributors, the media, the public in general, business partners, future generations, past generations (founders of organizations), academics, competitors, non Governmental organizations or activists considered individually, stakeholder representatives such as trade unions or trade associations of suppliers or distributors and financiers, other than stockholders (debt holders, bondholders, creditors), competitors, government, regulators and policymakers. Modern writers have identified the natural environment as part of an organization's stakeholders. This has been informed by the important role that the natural environment plays in the success of businesses. Most raw materials are found as naturally occurring substances, plants and plant products, animal or animal derivatives and minerals among others. The environment also acts as the sink at the end of the pipe.

It is thus impossible to think of success and performance of manufacturing firms without the natural environment. According to Porter (1980), competitive advantage and hence high performance can be achieved by controlling raw material source. In order to safeguard this important stakeholder, firms have an important role in pollution and emission control through active and proactive measures.

Natural Resource Base Theory

Researchers in the field of strategic management have long understood that competitive advantage depends on the match between distinctive internal (organizational) capabilities and changing external (environmental) circumstances (Andrews, 2001; Chandler, 1962; Wang & Li, 2008; Penrose, 1959). However, it has only been during the past decade that a bonafide theory, known as the resource-based view of the firm, has emerged, articulating the relationships among firm resources, capabilities, and competitive advantage (Porters, 1995).

Recent environmental challenges facing the world have led to scrutiny of human economic activity, especially manufacturing. Projected population growth in the next 40 years will lead to accelerated production. According to Gore (1992), this growth might not be ecologically sustainable. Such production will stress the earth's natural systems beyond recovery (Commoner, 1992). As such, economic activity must change or risk irreversible damage to the planet's basic ecological systems.

Economic approach theory

The economic approach describes firms' adoption behavior as driven by performance outcomes. A firm will more likely adopt a process or an innovation which will directly lead to improved profitability. This theory seeks to identify the circumstances when it pays to be green and that managers exhibit rational behavior when they adopt beyond compliance environmental practices also known as environmental proactivity. (Russo & Fouts, 1997; King & Michael, 2001). It will be expected that firms will adopt any practice that results to economic gain. As such, should it be established that adoption of green environment positively affects economic outcomes of a firm; such a firm will willingly adopt such practices to maximize on such gain. Green adoption has been credited with winning firms' environmental conscious high end clients, opens up controlled western markets, lowers production costs and in the public sector, pulls green donors and grant makers as well as sets an important example to the private sector.

Innovation Theory

This theory is attributed to Schumpeter (1934, 1939, 1943). The theory had low status until end of 1970s. The economic depression of the 1970s and the subsequent boom lead to the conclusion that innovations are the determinants responsible for most growth when an economic boom begins in a period of depression (Freeman, 1974). Earlier on, Schumpeter (1943) had attributed profit to dynamic changes resulting from an innovation. To start with he takes a capitalist closed economy which is in a stationary equilibrium. This equilibrium is characterized by what Schumpeter calls a "circular flow" which continues to repeat itself for ever. In such a static state, there is perfectly competitive equilibrium. The price of each product just equals its cost of production and there is no profit.

Only exogenous factors like weather conditions can cause changes in the circular flow position. In the circular flow position goods are being produced at a constant rate. This routine work is being performed by the salaried managers. It is the entrepreneur who disturbs the channels of this circular flow by the introduction of an innovation. Thus Schumpeter assigns the role of an innovator not to the capitalist but to the entrepreneur. He emphasizes creating new value-generating activities as a means of searching for higher profits from innovation. Such value generation can be tapped from adoption of the green environment.

Sundbo (1998) argues that innovations are important to the national economy during periods of depression. He adds that it is also important to individual organizations because it portends potential for expansion and future profits. Being innovative includes adopting issues of current global concern in to business processes in a manner that gets the business competitive advantage (Porters, 1995). According to Wanjohi (2016) the current global concern is climate change and its effects to human lives and livelihoods. Well managed organizations are innovatively adopting the green environment in their processes to gain competitive advantage.

Institutional Sociology Theory

This theory is rooted in institutional sociology processes through which firms respond to institutional pressures. The institutional sociology framework emphasizes the importance of regulatory, normative and cognitive factors that affect firms' decisions to adopt a specific organization practice, above and beyond the technical efficiency of the practice. Institutional theory places particular emphasis on legitimation processes and the tendency for institutionalized organizational structures and procedures to be taken for granted, regardless of their efficiency implications (Hoffman & Marc, 2002). Through the use of public procurement, a government can craft an operational direction in an economy. By adopting green public procurement, the government encourages its suppliers to think green. This is cascaded down to the other suppliers and firms in the whole chain. Over time, green gets adopted in the entire economy.

Contingency management approach theory

The contingency approach to leadership was influenced by two earlier research programs endeavoring to pinpoint effective leadership behavior (Cadez & Guilding, 2008). During the 1950s, researchers at Ohio State University administered extensive questionnaires measuring a range of possible leader behaviors in various organizational contexts. According to Wood (2009) although multiple sets of leadership behaviors were originally identified based on these questionnaires, two types of behaviors proved to be especially typical of effective leaders. The first one is consideration. These are leader behaviors that include building good rapport and interpersonal relationships and showing support and concern for subordinates. Second are behaviors that initiate structure.

Effect of adoption of green on procurement management

Procurement officials have to constantly weigh the trade-off s between conflicting procurement objectives, for example:

Adoption of green procurement and Cost Trade-off

Public procurement officials constantly face difficult choices between cost and environmental quality, especially in developing countries where the lowest bids carry the day. Should they pick Firm A, which proposes Ksh. 25,000 for an item that can potentially harm the environment, or Firm B, which proposes Ksh 35,000 for a similar item that conserves the environment? Environmental consideration cannot be considered without regard to cost (Shen & Daskin, 2005). Often, green technology and products come at a higher premium. Often such additional costs are offset by savings due to energy and material efficiency and increased demand. In addition, according to Stevenson and Hojati, (2007) there are periodic reviews and supplier audits that increase the costs to the public entity procuring the goods or services.

Adoption of Green Procurement and Lead Time Trade-off

Lead time management involves adjusting production to fit actual customer demand as it materializes. According to De Treville, Shapiro and Hameri, (2004) lead time management aims at reducing transaction uncertainty in the chain, which can be conceptualized as the primary goal of supply chain management. Assume that a public procurement official has two offers for an item. Firm A, proposes Ksh. 50,000 for a green contract and will deliver the item within two days after receiving an order, and Firm B, proposes ksh. 45,000 for a similar but green item and it takes him or her two extra days as compared with Firm A. Which firm should receive the contract? Studies have indicated that green suppliers are few, often serving several clients who have no alternative (Chen, Drezner, Ryan, & Simchi-Levi, 2000). As such, it takes longer to supply customer orders. This implies that many procurement managers will not prefer green inputs from this perspective, unless there are policy directions which allow preference for green inputs notwithstanding the delays.

Adoption of Green Procurement and Risk

According to Chopra, & Sodhi (2004), risks to the supply chain results to disruptions in the supply chain which ultimately affects production. In recent times, these risks include terror attacks, natural disaster disruptions, political violence and depletion of natural raw materials. Risk in procurement may arise from placing orders for products that do not exist at the moment, but are being developed. Such could be green products in development like solar systems and batteries and recycling technologies among others (Eu, 2010). It can also include public procurement officials deciding to pay a higher price to a responsible firm than gamble on a firm that cannot affirm its responsibility. In addition, public procurement officials may decide to pay a higher award price to a firm which based on an evaluation of his or her relative technical and business management strengths is more likely than a competitor to succeed in meeting the government's objectives. According to Rolfstam (2009) there may also be an inverse relationship between the goals of minimizing risk and maximizing competition. If minimizing technical risk were the only procurement goal, public procurement officials would tend to award only to firms who successfully performed the same or similar work on their previous contracts. Green procurement, being a new concept would not be easily integrated in to public procurement.

Adoption of Green Procurement and Socioeconomic Objectives

According to Mc Crudden (2004) the social economic objectives in procurement considers the use of procurement to promote equality on the basis of ethnicity, promotion of human rights, gender mainstreaming and spread of economic benefits through public procurement. Government entities often pay a premium, explicitly or implicitly, to accomplish socioeconomic goals. Bolton (2008) includes creation of employment, conserving the environment, promotion of culture, building its image among others as comprising social-economic objectives In America for example, the Buy American Act authorizes government entities, under certain circumstances, to pay a higher price for domestic-made goods vis-à-vis foreign made goods. On the other hand, socioeconomic programs, despite their cost, have arguably contributed to accomplishing other procurement goals. In Kenya, the youth, women and persons with disability legal public procurement has provided considerable work for small businesses run by those marginalized groups and in doing so can be said to have been effective in creating new sources of supply. Such legal frameworks, directly fronting green procurement would really promote green procurement in the developing world.

Adoption of Green Procurement and Competition

According to Hayes (2009) adoption of green has two consequences to a firm. To begin with, it might raise cost of production making an organization's products uncompetitive. The impact of this has been aggravated by opening up of domestic markets to foreign companies. Should the environmental regulations be very stringent for local organizations, their costs might be higher than those of competitors whose countries do not have stringent regulations (Chan, Li & Zhang, 2013). An alternative view, according to Ambec, Cohen, Elgie and Iano (2013) is that environmental regulation may foster innovation in environmentally friendly technologies, which might help regulated firms achieve technological leadership and boost greater economic

growth. Although competitiveness has not been an important consideration in the public sector, changing times are leading to demands that public service be run as efficiently as the private sector. This is supported by a study by Yang, Lu, Haider, & Marlow (2013) which indicated that a firm's green performance and external green collaboration act as mediator variables between internal green practices and firm competitiveness, and they influence firm competitiveness positively.

IV. Conclusion

Adoption of green procurement does affect several important indicators of procurement management. These include cost of production, risk and competitiveness among others. The effect is either positive or negative in the short run. Overall, literature indicates that sustainability will continue to be an important business consideration into the future. Procurement managers must rise to the occasion and adopt green procurement as much as the current regulations allow, while lobbying for green procurement policies to be put in place. Several studies that shown that consideration of adoption of green as a management practice gives mixed results. A review by Wanjohi, Gachoka, Kihoro and Ogutu (2013), indicated that adoption of green environment can be an innovation that can spur economic growth and hence lead to employment creation. Additionally, Wanjohi (2016) indicated that adoption of green does affect organizational characteristics for well performing organizations. Other studies have shown that adoption of green impacts productivity negatively. A more in-depth study is however needed to establish the exact empirical effect of adoption of green procurement practices on effective procurement management in the public sector.

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