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Influence of Green Procurement Practices in Supply Chain Management and Leadership on Performance of Parastatals in Kenya; A case of Kenya Airways and Kenya Pipeline

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Abstract

Government parastatals experience major challenges in the execution of procurement efficiency. In Kenya, parastatals procurement consumes huge figure national budget. The inefficiency and ineptness of overall procurement efficiency in many government parastatals hinders performance. The study empirically determines the influence of green procurement practices in supply chain management and leadership on performance of Kenya Airways and Kenya pipeline. A critical review of empirical literature is conducted to identify main thematic concepts of the paper. It was established that green procurement practices improves overall performance of a firm. Reverse logistics, green distribution, green purchasing, supply selection and green marketing have a significant effect on overall performance of government parastatals. It is concluded that reverse logistics influences the organizational performance through controlling of environmental risks, proper utilization of materials by customers, results to customer satisfaction and ensures recycling of materials. Green procurement affects the supply chain performance by ensuring production with low environmental impacts, products which are using environmental friendly processes, environmental collaboration with the suppliers, eco-labeled products and adoption of environmental criteria into the supplier assessment systems. It is also concluded that green packaging influences supply chain performance through reducing environmental impact by products within the supply chain, proper use of products by consumers, appropriate product design to minimize consumption of materials and energy, facilitates reuse, recycle and recovery of component materials. Waste management systems affects supply chain performance through recycling and re-using waste created, treating and controlling post combustion emissions, use of alternative fuels and encourages implementation of waste to energy process. The study

recommends that the Kenya Airways and Kenya pipeline should encourage proper utilization of materials and recycling of materials. The study recommends that Kenya Airways and Kenya pipeline should integrate green procurement process in all its purchasing processes since it's characterized by a low environmental impact that is products environmentally friendly in nature and produced using environmentally friendly processes. The study recommends that the management of Kenya Airways and Kenya pipeline should purchase products from manufacturers whose design products minimize consumption of materials and energy, that facilitate the reuse, recycle and recovery of component materials. The study recommends that the Kenya Airways and Kenya pipeline should invest more in waste management systems.

Key words: *Green Procurement Practices, Supply Chain Management, leadership, Performance, Parastatals*

1.1 Introduction

Procurement services remain critical activities in all organization. In some organizations, procurement is the heart sustaining the performance of the business entity. In government parastatals, procurement services play a very important role in service delivery (Public Procurement Oversight Authority, 2016). Recently, there has been an urge for government parastatals to adopt green procurement practices in order to safeguard the environment. The ban on use of plastic materials in 2016 was meant promote green procurement services while promoting firm performance.

Green Public Procurement (GPP) is a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life-cycle (European Commission, 2016). Green procurement is adding environmental aspects to price and performance criteria when making purchasing decisions. The ultimate goal of green procuremnt is reducing environmental impact of sourcing to increase resource efficiency (Malaba, 2014; Ramakrishnan, 2015). It is the initiative that tries to ensure that purchased products meet environmental objectives set by organizations. The awareness on the role of GP in supporting sustainable consumption and production patterns has strongly increased. It is spreading through the public authorities (PAs) both as a policy instrument and as a technical tool (Namusonge, 2016; Testa, 2012).

As a result green procurement is gaining prominence in empirical literature, with scholars pointing at a possible relationship between green procurement and organizational performance (Fahimnia, Sarkis & Davarzani, 2015). It is increasing being used as an effective tool to reduce the impacts of consumption on the environment and also to promote development of clean production technology. Qinghu (2015) observed that Green procurement in the developing nations such as China has become a key approach for enterprises seeking to become environmental sustainable and increase performance in instances where there is increased competition, a lot of regulations and market pressure and drivers. Green procurement practices include, reverse logistics, green purchasing, green manufacturing, green distribution, green Marketing supplier selection, E-procurement, Lean supply and Supplier development.

Reverse logistics is defined as the effective and efficient management of the series of activities required to retrieve a product from a customer in order to either dispose of it or recover value (Defee *et al.,* 2009). On their part Rogers and Tibben-Lembke (1999) defined reverse supply chain as the process of planning, implementing and controlling the efficient, cost- effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or for proper disposal.

Purchasing activities include vendor selection, material selection, outsourcing, negotiation, buying, delivery, scheduling, and materials management (Toke et al., 2010). Amemba et al. (2013) defined green purchasing as environmental purchasing involving activities such as reduction, reuse and recycling of materials (3Rs) in the process of purchasing. Toke et al. (2010) identified a number of initiatives that can be incorporated in the purchasing function to achieve environmental sustainability; organizations can develop Supplier Environmental Questionnaire to help in finding out suppliers' stance on Climate Change and related Environmental issues before selecting suppliers. Organizations can conduct Supplier Environmental Audits and Assessments to monitor supplier compliance to environmental standards and requirements. Other than the above initiatives organizations can opt for a participative approach to green purchasing by jointly developing cleaner technology and processes with their suppliers (Ninlawan et al., 2010)

According to Nimawat and Namdev (2012), green manufacturing involves use of fast, reliable, and energy efficient production equipment aimed at eliminating wastes and improving productivity. It involves production processes that use inputs with minimal or reduced environmental impacts and which are highly efficient, and are associated with little or no waste or pollution (Amemba *et al.,* 2013). Al-Odeh and Smallwood (2012) associated green manufacturing with clean production method, efficient technology, reduced raw materials and resources so as to reach low input, high output and low pollution while Amemba et al. (2013) advocated for use environmentally friendly energy sources like solar energy, recycling of raw materials and use biodegradable energy sources and materials in manufacturing operations.

Manufactured products have to reach the market in time; the market has to be informed about the products' availability, their features and capabilities. This requires appropriate distribution and marketing systems. It is important that environmental concerns are taken care of by offering environmentally friendly products through environmentally friendly distribution and marketing system. Green distribution is achievable through; green packaging, green transportation and logistics (Nimawat & Namdev, 2012). According to Ninlawan et al., (2010 Green packaging involves downsized packaging and use of green packaging materials. They also point out the need to cooperate with vendors to standardize packaging, encourage and adopt returnable packaging methods, promote recycling and reuse of packaging materials. The storage facility is another important aspect of green distribution. The storage facility should be capable of storing different categories of materials. In addition, the design and construction of storage facilities must meet the requirements of non-polluted environment, while strengthening maintenance of good humidity, corrosion, waterproofing among other factors (Zhang & Zheng, 2010). Key in

distribution is transportation, According to Al-Odeh and Smallwood (2012), factors like: fuel, modes of transport, infrastructure, and operational practices are important factors to consider in developing green transportation.

Al-Odeh and Smallwood, (2012) pointed out that achieving sustainable marketing needs keeping biological balance and pay more attention to environmental protection. The concept of green marketing tries to address these issues. It involves commitment of organizations to make sure their products and operations are environmentally friendly. According to Nimawat and Namdev (2012), green marketing is any marketing activity of an organization that aims at creating a positive effect or removes a negative effect of a particular product on the environment. It also brings an organization close to its clients, particularly clients with particular interest consumer rights and environment.

Leadership and management support plays a very important role in bringing forth enhanced organizational performance in procurement. The implementation of green procurement practices requires leadership support. Amayi and Ngugi's (2013) research on factors influencing procurement performance showed that leadership and management support is positively correlated with organizational performance. The systems theory plays a very important role in asserting the role of leadership and management support in enhancing organizational performance. According to Chari *et al.* (2016) leadership and management support influence all aspects of procurement performance ranging from establishing new systems, green procurement as well as improving levels of transparency. Lack of leadership and management support has also been responsible for the failure of many procurement initiatives.

1.2 Statement of the Problem

Adopting green supply chain in business operations has become an important strategic issue that organizations are today dealing with. In government parastatals, procurement services play a very important role in service delivery (Public Procurement Oversight Authority, 2010). According to Buchalcevova and Gala (2012), procuring organizations and other supply chain partners are more seriously involved in designing and implementing green procurement Policies focusing on how environmental issues and issues relating to other aspects of the sustainable development pillars can be integrated in the procurement process activities (Humphreys, 2013). The need to improve organizational efficiency, reduce waste, overcome supply chain risk, and achieve competitive position has made companies to start considering environmental issues from a competitive view point.

Government parastatals experience major challenges in the execution of procurement efficiency. In Kenya, procurement consumes 45% of the national budget. Importantly, public procurement accounts for a high proportion of total government expenditure in Kenya (Public Procurement Oversight Authority, 2010). According to Public Procurement Oversight Authority (2010), the government of Kenyan spends approximately Kshs. 534 billion per year on procurement However, on an annual basis, the government of Kenya losses approximately Ksh. 121 billion representing 17 per cent of the national budget due to inflated procurement quotations (Public Procurement Oversight Authority, 2010). According to Public Procurement Oversight Authority

(PPOA, 2010), most of the tendered products/services in many government parastatals have a mark-up of 60 per cent on the market prices. The inefficiency and ineptness of overall procurement efficiency in many government parastatals contributes to loss of over Ksh.50 million annually.

Sari and Yanginlar (2015) investigated the relationship between green logistics practices and firm performance in healthcare organizations in Turkey and concluded that green logistics practices positively supports firm performance measured as operational, economic, and environmental performances. In a study on green supply chain practices as a supply chain performance tool in state corporations in Kenya, Case Study Of Kenya Electricity Generating Company Limited, Muthami and Bwisa (2017) established that reverse logistics influences the supply chain performance through controlling of environmental risks, proper utilization of materials by customers, results to customer satisfaction and ensures recycling of materials. Green procurement affects the supply chain performance by ensuring production with low environmental impacts, products which are using environmental friendly processes, environmental collaboration with the suppliers, eco-labeled products and adoption of environmental criteria into the supplier assessment systems. Further, Omusebe, Iravo, Ismail and Wanjohi (2017) noted that the adoption of green procurement does affect several important indicators of procurement management. These include cost of production, risk and competitiveness among others. 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. It is evident that green procurement influences firm performance and this may be replicated to government parastatals in Kenya.

1.3 Objective of the Study

To determine the influence of green procurement practices in supply chain management and leadership on performance of Kenya Airways and Kenya pipeline.

2.1 Theoretical Background

2.1.1 Institutional theory

Institutional theory Institutional theory as a traditional approach is used to examine public procurement (Obanda, 2010). Institutional theory describes effects of external institutional pressures on the organizations and defines institutions as regulatory structures, government agencies, laws, courts, and professions, as well as interest groups and public opinion (Lowell, 1994). According to Scott (2003) institutions are composed of cultural-cognitive and regulative elements that together with associated activities and resources give meaning to life. The author explains the three pillars of institutions as regulatory (policy), normative and cultural cognitive. The regulatory (policy) pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism with emphasis on compliance. The normative pillar refers to norm show things should be done and the values preferred desired. The cultural pillar rests on shared understanding (common beliefs, symbols, shared understanding).This theory is critical in regards to procurement planning. The Public procurement asset and disposal Act (2015) requires an

accounting officer to prepare an annual procurement plan that's realistic in a format set out in the regulations within the approved budget prior to commencement of each financial year as part of the annual budget preparation process. Relevant laws and policies are required to support the success of green procurement practices among the Kenyan government parastatals.

2.1.2 Systems Theory

Systems theory describes the interrelatedness of all parts of an organization and how one change in one area can affect multiple other parts (Li & Geiser, 2009). According to Walker & Brammer (2009), organization act as systems interacting with their environment. Any equilibrium is constantly changing as the organization adapts to its changing environment. The foundation of systems theory is that all the components of an organization are interrelated, and that changing one variable might impact many others (Maignan *et al.,* 2012). Organizations are viewed as open systems, continually interacting with their environment. They are in a state of dynamic equilibrium as they adapt to environmental changes. According to Lozano and Valles (2013), system theory views organizational structure as the established pattern of relationships among the parts of the organization of particular importance is the patterns in relationships and duties. Organizations are open systems and depend on their environment for support. The relationship between an organization and its environment is characterized by a two-way flow of information and energy (Marron, 2013). Most organizations attempt to influence their environment. While Stafford and Harthman, (2010) were among the first to explain the adoption of practices within the environmental context, several scholars have subsequently investigated the positive impact of these institutional pressures on green procurement (Zhu *et al.,* 2009). Thus systems theory supports green procurement practices where organizations interact with their respective environments as a system to enable them collaborate. The theory is important to the study because, reverse logistics which is part of organizational structure has impact on organization financial position and organizations are open systems and depend on their environment for support by focusing on the movement and management of products and resources after the sale and after delivery to the customer. Reverse logistics is a process that enables organizations to become more environmentally capable through recycling, reusing and reducing the amount of materials used.

2.1.3 Agency Theory

According to Jensen and Meckling (1976), an agency relationship is a contract under which one or more persons (principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent." In this relationship, the agent must act in an honest way since the chosen actions have consequences for both parties. Consistent with the tenets of agency theory, it is assumed that agents i.e. purchasing officials are rational, self-interested people. This concept assumes that the principal and agent do not share the same levels of information, and as such, the agent can exploit a situation, sometimes to the disadvantage of the principal. Agency theory is most relevant in public contracting. Situations arise where there is a substantial conflict of interest between principals

and agents and sufficient outcome uncertainty to trigger the risk implications of the theory (Eisenhardt, 1989). This is particularly relevant to public procurement functions as staff may have conflicting interests contrary to laid down procedures thus affecting adoption of green procurement as espoused in the Public Procurement Policy of 2009.

2.1.4 Stewardship Theory

Stewardship theory has its roots from psychology and sociology and is defined by Davis, Schoorman & Donaldson (1997) as a steward protects and maximises shareholders wealth through firm performance, because by so doing, the steward's utility functions are maximised. In this perspective, stewards are company executives and managers working for the shareholders, protects and make profits for the shareholders. Managers are considered good stewards who will act in the best interest of the owners (Donaldson & Davis, 1991). The principal- steward relationship is a relationship of trust and was developed as an alternative to the agency theory. Unlike agency theory, stewardship theory stresses not on the perspective of individualism (Donaldson & Davis, 1991), but rather on the role of top management being as stewards, integrating their goals as part of the organization.

The stewardship perspective suggests that stewards are satisfied and motivated when organizational success is attained. Stewards are motivated only by making the right decisions which are in the best interest of the organisation, as there is strong assumption that stewards will benefit, if the firm is prospered. A steward protects and maximises shareholders wealth through firm performance, because by doing so, the steward's utility functions are maximized. The success of green procurement practices among the Kenyan government parastatals requires leadership commitment.

2.1.5 Logistics Theory

Logistics is defined as the planning, organization, and control of all activities in the material flow, from raw material until final consumption and reverse flows of the manufactured product, with the aim of satisfying the customer's and other interest party's needs and wishes i.e., to provide a good customer service, low cost, low tied-up capital and small environmental consequences (Christopher, 2012). Logistics is also defined as those activities that relate to receiving the right product or service in the right quantity, in the right quality, in the right place, at the right time, delivering to the right customer, and doing this at the right cost (Jumadi & Zailani, 2010). Logistics management is that part of procurement management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customer's requirements (Walker & Jones, 2012). Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfilment, logistics network design, inventory management, supply or demand planning, and management of third party logistics service providers (Cagno & Micheli, 2012).

2.2 Empirical Literature

Empirical studies have shown that consideration of adoption of green as a management practice gives mixed results. While employing descriptive research design to determine the effects of green procurement practices on operational efficiency at Kenya Airways Limited, Atambo and Omachar (2016) found out that Kenya Airways procures product that are specifically designed making a product more environmentally compatible and that materials at Kenya airways are sourced from credible suppliers that provide quality goods, thorough procurement selection is done to ensure supply goods supplied can be recycled, incorporating the concept of green in the design process, the power consumption can be reduced to greater extent through low production cost and that there is strong relationship building between suppliers and the company thus production efficiency and that Kenya Airways engages in the green procurement practices so as to give their customers environmentally friendly products by green packaging practices waste prevention and energy saving on low energy consuming goods. Muthami and Bwisa (2017) while conducting a study on green supply chain practices as a supply chain performance tool in state corporations in Kenya noted that reverse logistics influences the supply chain performance through controlling of environmental risks, proper utilization of materials by customers, results to customer satisfaction and ensures recycling of materials. Green procurement affects the supply chain performance by ensuring production with low environmental impacts, products which are using environmental friendly processes, environmental collaboration with the suppliers, eco-labeled products and adoption of environmental criteria into the supplier assessment systems. Green packaging influences supply chain performance through reducing environmental impact by products within the supply chain, proper use of products by consumers, appropriate product design to minimize consumption of materials and energy, facilitates reuse, recycle and recovery of component materials. Waste management systems affects supply chain performance through recycling and re-using waste created, treating and controlling post combustion emissions, use of alternative fuels and encourages implementation of waste to energy process.

In the same line, Omusebe, Iravo, Ismail and Wanjohi (2017) study on the effect of adoption of green procurement practices on effective procurement management in the public sector indicated that the adoption of green procurement does affect several important indicators of procurement management. These include cost of production, risk and competitiveness among others. 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. Muma, Nyaoga, Matwere and Nyambega (2014) while investigating the effect of Green Supply Chain Management (GSCM) on Environmental Performance among tea processing firms in Kericho County established that GSCM has positive effect on environmental performance.

Using descriptive research design to establish the role of green procurement practices on organizational performance of private sector in Kenya Sarhaye and Marendi (2017) established that there existed a positive relation between reverse logistics and organizational performance of

Coca-Cola Company. On supplier assessment, it was concluded that there existed a strong positive relation between supplier assessment and organizational performance of Coca-Cola Company. The study further concluded that the suppliers are also assessed based on their ability to control pollution and hence a safe environment. Chrisostom and Monari (2018) while studying the influence of green procurement practices on performance of registered automotive in Kenya, green logistics management had a moderate positive correlation giving a significant relationship with performance. Some green procurement practices like green logistics management had a significant effect on performance.

An empirical study by Nasiche and Ngugi (2014) to determinants of adoption of green procurement in the public sector the case study of Kenya Pipeline Company found out that organization's green capacity, incentives and pressures are the main determinants of green Public Procurement adoption at KPC. These results are an indication that the success of green public procurement relies heavily on enhancing the internal capacity of the organization. Kebenei (2016) assessed the effects of green supply chain management on organizational productivity: a survey of Textile Industries in Eldoret and established that all the three predictor variables; green procurement, green manufacturing and operations and reverse logistics showed a strong relationship with the dependent variable organizational productivity. Furthermore, Machio and Keitany (2018) while studying the effects of green sourcing on the performance of sugar factories in Western Kenya Sugar Zone indicated that green sourcing has a direct influence on the performance of the sugar firms in the Western Kenya Sugar Zone.

2.3 Conceptual Framework

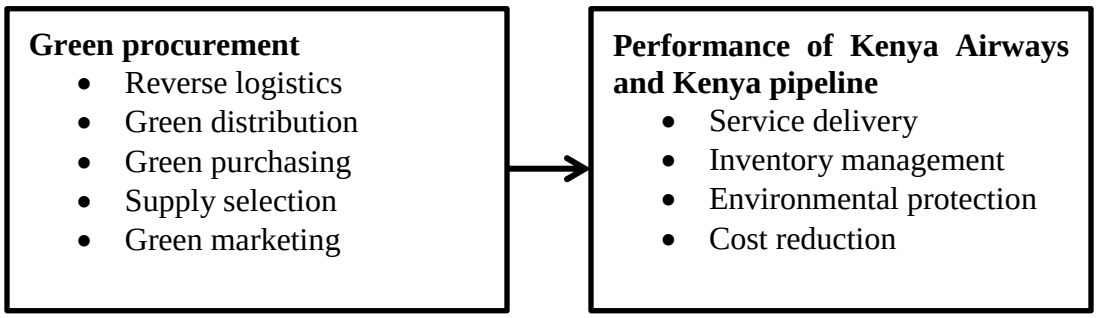

Figure 1: Conceptual Framework

3.0 Research Methodology

The study determines the influence of green procurement practices in supply chain management and leadership on performance of parastatals in Kenya. The paper employs a desk study review methodology. A critical review of empirical literature is conducted to identify main thematic concepts of the paper.

4.0 Results and Discussion

Empirical results indicate that adoption of green procurement practices improves the supply chain performance. The improved performance is reflected through improved customer service, minimized ordering costs, and reduced inventory stock. This shows that green procurement is a well customized process to suit the organization's changing needs as companies had very well defined green procurement strategies. Implementation of green procurement helps organization achieve a competitive advantage. Omusebe (2018) noted that green supply chain practices; considering the use of green raw material, considering the use of green manufacturing technology and green distribution. This result relates with those found by Unine van den Berg and Hugo van den Berg (2013) in their study the effect of greening the supplier and innovation on environmental performance and competitive advantage. In this study, it was found that greening the supplier, which included using green raw materials, does not show a significant correlation with competitive advantage and hence firm performance.

Green supply chain practices were significantly related to firm performance. Unlike in the study carried out by Hollos *et al.* (2012) on Western European firms that revealed that sustainable supplier cooperation has generally positive effects on firm performance across social, green, and economic dimensions, and in which they noted that only green practices have positive significant effects on economic performance, this study revealed that green procurement activities, which encompass supplier cooperation, have a negative relation to firm performance. Nderitu and Ngugi (2014) noted that Green procurement attributes contributes to performance excellence. Omusebe , Iravo, Ismail and Wanjohi (2017) established that it is important to consider the effect of adopting green on these considerations of effective procurement. Important considerations such as cost effectiveness, timely availability of supplies, high quality inputs among others might be effected by green procurement. Muthami and Bwisa (2017) noted that reverse logistics influences the supply chain performance through controlling of environmental risks, proper utilization of materials by customers, results to customer satisfaction and ensures recycling of materials. Green procurement affects the supply chain performance by ensuring production with low environmental impacts, products which are using environmental friendly processes, environmental collaboration with the suppliers, eco-labelled products and adoption of environmental criteria into the supplier assessment systems. Green packaging influences supply chain performance through reducing environmental impact by products within the supply chain, proper use of products by consumers, appropriate product design to minimize consumption of materials and energy, facilitates reuse, recycle and recovery of component materials. Waste management systems affects supply chain performance through recycling and re-using waste created, treating and controlling post combustion emissions, use of alternative fuels and encourages implementation of waste to energy process.

5.0 Conclusions

It is concluded that reverse logistics influences the organizational performance through controlling of environmental risks, proper utilization of materials by customers, results to customer satisfaction and ensures recycling of materials. Green procurement affects the supply chain performance by ensuring production with low environmental impacts, products which are using environmental friendly processes, environmental collaboration with the suppliers, eco-labeled products and adoption of environmental criteria into the supplier assessment systems. It is also concluded that green packaging influences supply chain performance through reducing environmental impact by products within the supply chain, proper use of products by consumers, appropriate product design to minimize consumption of materials and energy, facilitates reuse, recycle and recovery of component materials. Waste management systems affects supply chain performance through recycling and re-using waste created, treating and controlling post combustion emissions, use of alternative fuels and encourages implementation of waste to energy process.

Based on research finding it can be concluded that material sourcing influence the performance of government parastatals. Material sourcing has a positive relationship with performance of government parastatals. Material sourcing entails the reduction, reuse and recycling of materials in the process of purchasing. It is also concluded that eco-design manufacturing influence the performance of government parastatals. Eco-design manufacturing involve use of inputs with relatively low environmental impacts, which are highly efficient, and which generate little or no waste or pollution. Eco-design manufacturing can lead to lower raw material costs, production efficiency gains, reduced environmental and occupational safety expenses, and improved corporate image.

The empirical results also concluded that purchasing of commodities is done with keen attention to quality of supplies; the organization frequently participates in award winning environmental programmes. On supplier assessment, concluded that there existed a strong positive relation between supplier assessment and organizational performance. The study further concluded that the suppliers are also assessed based on their ability to control pollution and hence a safe environment. The suppliers are assessed based on their ability to supply green products and hence safe environment.

Based on the empirical studies, it is concluded that green logistics management has a significant effect on firm performance. It was also concluded that government parastatals need to embrace green logistics management practices in order to achieve sustainable competitive advantage and improved performance. The results obtained from this study were important in terms of reflecting the situation on the usage of green logistics management practices and performance of a firm. The study concludes that implementation of green procurement practices increases the supply chain performance. The performance is reflected through improved customer service, minimized ordering costs, and reduced inventory stock. 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.

It was also concluded that there are a lot of organizational benefits associated with the adoption of green procurement practices. The practices like green sourcing, green tendering, organization green awareness and reverse logistics and have significant effect on firm performance. The use of such green procurement practices is a move in the right direction in greening organisations operations. This is critical in controlling environmental issues associated with the companies and at the same time improvement in the companies' performance.

6.0 Recommendations

The study recommends that the Kenya Airways and Kenya pipeline should encourage proper utilization of materials and recycling of materials. The study recommends that Kenya Airways and Kenya pipeline should integrate green procurement process in all its purchasing processes since it's characterized by a low environmental impact that is products environmentally friendly in nature and produced using environmentally friendly processes. The study recommends that the management of Kenya Airways and Kenya pipeline should purchase products from manufacturers whose design products minimize consumption of materials and energy, that facilitate the reuse, recycle and recovery of component materials. The study recommends that the management of government parastatals should invest more in waste management systems.

Government, regulatory bodies, established institutions and industry associations should take authority to establish sustainable procurement guidelines, references standards and codes for interested parties. The bodies can support sustainable procurement through more regulations, training opportunities for staff, standards and code of practices.

The study recommended that the managers of the Kenya Airways and Kenya pipeline should adopt reverse logistics practices to increase organizational performance. The increased adoption of remanufacture and recycling reverse logistics practices with minimal adoption of reuse reverse logistics practice ensures maximization of resources. Further, since environment protection has been concern to public in recent years, the study recommended that government should create policies governing suppliers in the parastatals. Supplier assessment is necessary for sustainable supply chain analysis based on the analytical network process and environmental factors. The government parastatals should embrace and green sourcing in order to improve the quality of supplies since the higher the level of adoption of green sourcing leads to high firm performance.

The parastatals should enhance green logistics management so as to improve their performance. The firms should ensure that they adopt the appropriate green logistics management practices which could be a source of competitive advantage that can boost their performance. Green logistics tools and techniques such as alternative fuel, cleaner fuels, electric drive, low emissions and reverse logistics should be given prominence in procurement so as to enhance the performance of the firms. To achieve effective adoption of the various green procurement practices, it requires clear policies to be formulated, implemented and monitored to ensure they

remain relevant to the business. There is also need for legislation in this area to enhance green procurement practices in organisations.

The empirical studies show that leadership and management support towards procurement positively impact on organizational performance. According to the research findings, the top management is charged with the responsibility of formulating policies, vision and goals of the organization; ensuring that employees are committed to organizational goals; provide guidance to support staff and providing direction to the entire organization. The for procurement initiatives to be successful, they must enjoy the support of the leadership and management. Additionally, to leadership and management cultivate collaborations among members of the organization within the procurement department in effect leading to improvement in organizational performance. The study recommends that the county leaders should demonstrate support for the firm's procurement officers to learn and emulate them.

The implementation of green procurement requires actions and participation from all levels of stakeholders. Therefore a collaborative approach between the procurement team and the end user/customer is the best set up for sustainable procurement. In tandem with these efforts, the top management should put in place additional measures to encourage asset owners and facilities managers to consider green procurement practices to improve sustainability performance. Green procurement needs to be embraced to help the management team appreciate the direct effect on the performance of the supply chain. Adoption of flexible green procurement practices through appropriate research will help the business meet diverse yet drastic changing needs as well as address challenges arising from a dynamic global business environment. Management should embrace both qualitative and quantitative aspects in their decision making on green procurement practices and strategies, which should be integrated across the organization.

As discussed in the literature review, is such that organizations that adopt sound green procurement practices outperform those that do not and indeed the gap keeps widening as such companies continue to innovatively implore fresh green procurement practices. With the globalization and stiff competition, companies need to proactively and innovatively invest in appropriate green procurement practices to realize superior supply chain performance. Relevant laws and policies are required to support the success of green procurement practices among the Kenyan government parastatals. This empirical result informs the Institutional Theory.

It was also established that reverse logistics which is part of organizational structure has impact on organization financial position and organizations are open systems and depend on their environment for support by focusing on the movement and management of products and resources after the sale and after delivery to the customer. The empirical findings thus make a contribution to system theory. The empirical studies show that leadership and management support towards procurement positively impact on organizational performance. The success of green procurement practices among the Kenyan government parastatals requires leadership commitment. The empirical results thus make a contribution to Stewardship Theory.

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