



EFFECT OF TECHNOLOGY ADOPTION ON GREEN PUBLIC PROCUREMENT EFFECTIVENESS IN THE COUNTY GOVERNMENT OF KAKAMEGA, KENYA

Buhere, I. O., & Mukanzi, C.

EFFECT OF TECHNOLOGY ADOPTION ON GREEN PUBLIC PROCUREMENT EFFECTIVENESS IN THE COUNTY GOVERNMENT OF KAKAMEGA, KENYA

Buhere, I. O.,¹ & Mukanzi, C.²

¹Msc. Scholar, Jomo Kenyatta University of Agriculture & Technology [JKUAT], Kakamega, Kenya

²Lecturer, Jomo Kenyatta University of Agriculture & Technology [JKUAT], Kakamega, Kenya

Accepted: March 19, 2019

ABSTRACT

The study examined the effect of technology adoption on green public procurement effectiveness in the county government of Kakamega, Kenya. The study employed a descriptive survey research design. The total target population of the study was 162 employees of Kakamega County procurement department. The study sample size was 77 respondents. A simple random sampling technique was used. The study used questionnaires to collect data. The data was collected and fed in statistical packages of social science (SPSS) Version 20 and analyzed by use of descriptive and inferential data analysis technique involving correlation and regression. The study findings indicated that there was a significant relationship between technology adoption and Green Public Procurement effectiveness. The study concluded that organizations were beginning to realize the potential of emerging technologies to change public procurement and that the cost of environmentally friendly goods drives adoption of Green Public Procurement products. The study recommended that companies should formulate and implement a Green Public Procurement policy to support Green Public Procurement initiatives. At the organizational level, management should train and develop staff on Green Public Procurement and its importance. It was hoped that findings enabled organizations to understand better the importance of Green Public Procurement in organization to gain competitive advantage, it acts as source of knowledge to researchers and it helps government in making policies relating to Green Public Procurement.

Key Words: *Technology Adoption, Green Public Procurement, County Government of Kakamega*

CITATION: Buhere, I. O., & Mukanzi, C. (2019). Effect of technology adoption on green public procurement effectiveness in the county government of Kakamega, Kenya. *The Strategic Journal of Business & Change Management*, 6 (1), 647 – 660.

INTRODUCTION

Green Public Procurement is the purchase of environmentally friendly products and services, the selection of contractors and the setting of environmental requirements in a contract. Green Public Procurement stems from pollution prevention principles and activities. Also known as green or environmental purchasing, Green Public Procurement compares price, technology, quality and the environmental impact of the product, service or contract (Min, 2005).

Green Public Procurement policies are applicable to all organizations, regardless of size. Green Public Procurement programs may be as simple as purchasing renewable energy or recycled office paper or more involved such as setting environmental requirements for suppliers and contractors. Green products or services utilize fewer resources, are designed to last longer and minimize their impact on the environment from cradle to grave. In addition, green products and services have less of an impact on human health and may have higher safety standards. Whilst some "green" products or services may have a greater upfront expense, they save money over the life of the product or service (Galle, 2005).

Governments and other public institutions combined, purchase more than a trillion of goods and services each year (Burrow, 2013). Many of these products contribute to problems in the overall environment, including contamination of the air and water, and depletion of environmental resources (Burrow, 2013). Products require special waste disposal and reporting procedures which can be cumbersome and expensive. Furthermore, government employees using these products may be exposed to compounds that are potentially harmful to their health (Brammer, 2011).

Public institutions have an opportunity to serve as a community model for environmental leadership by incorporating a plan of action that will conserve

precious resources such as water, raw materials and energy, in addition to reducing the use of hazardous substances and potentially improve the environmental quality of the region (Holt, 2015). Incorporating environmental considerations in public purchasing, public institutions can reduce its burden on the local and global environment, remove unnecessary hazards from its operations, protect public health, reduce costs and liabilities, and help develop markets for environmentally responsible products (Thai, 2011). Hence, there is need for a green public procurement policy to address the common environmental problems that needed common solutions.

In Africa, many public sector organizations view efficient Green Public Procurement practices as an add-on or an approach that costs more. In truth, sustainable solutions can often cost less over the whole life of the purchase. Some key benefits include: value for money, protection and enhancement of the environment, more efficient use of resources, greater social inclusion, air and ethical trade, support for innovation, better risk management, and lower whole-life costs improved supplier relationships, a diverse and flexible supply chain and a competitive edge (Talluri, 2014). Efficient Green Public Procurement policies and practices are critical for good public financial management and effective budget implementation (Zuzana, 2012). In many African countries, public Green Public Procurement accounts for a substantial part of fiscal expenditures, making sound Green Public Procurement methods central not only for sound public financial management but also for inclusive growth (Zuzana, 2012).

In Kenya, all public organizations are supposed to design and implement procurement policies in line with the Kenya public procurement legal framework that comprises of the Public Procurement and Disposal Act, 2015 (GOK, 2013). PPDA applies to all procurement of goods, works and services, as well as

the disposal of assets by public entities. Public entities are those that procure goods, services or works utilizing public funds. Green Public Procurement has been a logical extension of this work (Walker, 2011), yet Kenya as one of the developing countries has been slow in taking up structured and policy driven approach to enhancing effectiveness of green public procurement, the benefits accruing notwithstanding.

Green Public Procurement is becoming a cornerstone of environmental policies and the awareness on the role of Green Public Procurement in supporting sustainable consumption and production patterns have strongly increased and, today, are spreading through the public authorities both as a policy instrument and as a technical tool. With the change of the social economic development level and market environment, enterprise competitive means have developed gradually from the quality competition, the service competition, the brand competition to the green competition. The export of products is threatened by international green trade barriers which directly affect business competitiveness in the global market.

Statement of the Problem

Environmental obligations have grown substantially as organizations become more conscious of its environment and legislation relating to the environment is increasing in number that requires companies to be environmentally responsible (Odhiambo, 2008). In light of increasing costs of waste management, environmental degradation, public health concerns, climate change, resource depletion, and persistent global poverty, the supply management profession is increasingly being called upon to contribute to broader organizational goals of sustainable development through the inclusion of social and environmental criteria within procurement processes. Governments spend between 12% and 30% of their GDP buying goods and services which

indicate their power of the public purse as an enabler in ensuring markets transition towards a greener economy.

Environmental issues have not been fully achieved and that there are still challenges facing effectiveness of green public procurement in organizations in Kenya (Francesco, 2012). Effectiveness of green public procurement is still low, currently there is lack of structural and organizational change to support effectiveness of Green Public Procurement, poor legal and regulatory framework, cost of Green Public Procurement is relatively high, and the resources required to implement Green Public Procurement are limited. It is logical to articulate that the current phenomenon of poor effectiveness of Green Public Procurement can be reversed if the stakeholders ensure that there is structural and organizational change to support effective Green Public Procurement. Local studies so far done have focused on procurement in general. Available evidence points to the issues of environment being at the heart of organizations but whereas they are expected to be in this league, evidence available points to the fact that there could be effect of technology adoption on green public procurement. It is against this background that this inquiry sought to examine effect of technology adoption on Green Public Procurement effectiveness in the County Government of Kakamega, Kenya.

Research Objective

The study sought to examine the effect of technology adoption on Green Public Procurement effectiveness in the County Government of Kakamega, Kenya.

Research Hypothesis

H0₁: There is no significant relationship between technology adoption and Green Public Procurement effectiveness in the County Government of Kakamega, Kenya

LITERATURE REVIEW

Theoretical Review

Transactional Cost Theory

Transactional cost theory is related to production theory and they are often used together. However, the question is usually how much to produce, as opposed to which inputs to use. That is, assume that we use production theory to choose the optimal ratio of inputs (for example 2 fewer engineers than technicians), how much should we produce in order to minimize costs and/or maximize profits? We can also learn a lot about what kind of costs matter for decisions made by managers, and what kinds of costs do not. This theory was developed by Ronald Coase (1937). Transactional cost theory tries to explain why companies exist, and why companies expand or source out activities to the external environment.

The Transactional cost theory supposes that the companies try to minimize the costs of exchanging resources with the environment, and their companies try to minimize the bureaucratic costs of exchanges within the company. The theory sees institutions and market as different possible forms of organizing and coordinating economic transactions. When external transactions costs are high than the company's internal bureaucratic costs, the company will grow, because the company is able to perform its activities more cheaply, than if the activities were performed in the market. According to Williamson (2001), a transaction cost occurs when a good or service is transferred across a technologically separable interface.

Therefore, transaction costs arise every time a product or service is being transferred from one stage to another, where new sets of technological capabilities are needed to make the product or service. In this case a company or organization will adapt e-procurement if the transaction cost is less than the costs of manually process of procurement.

Transaction cost theory is based on idea that cooperation exists because the use of markets or the price mechanisms generate transaction costs as e-procurement enables effective automation of processes, which in turn decrease operational transaction costs and increase competitiveness of cooperative purchasing

Empirical Review

Information Technology (IT) is a technology that involves use of computers, software and internet connections infrastructure for supporting information processing and communication functions (Crompton, 2013). The use of information technology in public sector has not been effectively implemented since most of the procurement functions are subjected to manual procedures that are slow, inaccurate and ineffective. This has negative impact on procurement procedures since the public sector organizations cannot effectively monitor and coordinate procurement procedures of all road construction projects due to lack of computerized procurement procedures and this subjects much of procurement functions to manual operations which are slow and ineffective. The use of computerized procurement systems demonstrates effective use of information technology. In cases where the organization subjects all its procurement functions to manual procedures, the benefits of information technology are not experienced, and a high level of inefficiency is experienced during execution of procurement procedures.

Golder (2013) asserts that, organizations that fail to integrate procurement functions with information communication technology systems like electronic data interchange, employs manual procurement procedures that are inefficient and ineffective and leads this to wastage of procurement funds since the procurement processes are characterized by a low degree of transparency. According to Ken (2013), IT has reached almost every aspect of procurement and

may enhance and deepen the effort of procurement reform.

Conceptual Framework

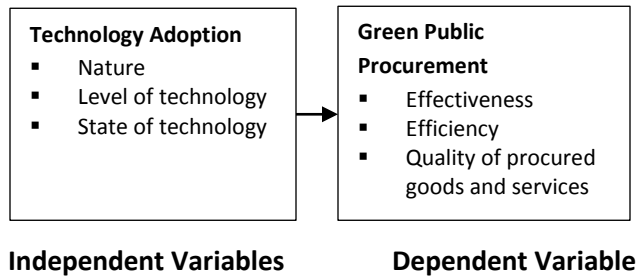


Figure 1: Conceptual Framework

Source: Author (2019)

METHODOLOGY

The study adopted a descriptive survey design. According to Kothari (2008), descriptive survey

method of research is preferred because it enables the researcher to examine various other unknown situations in the circumstances and it enables a researcher to collect data from a wider area in a short time. The target population for the study therefore, comprised of all 162 employees working in the procurement department of Kakamega County. The main data collection instruments that were used to collect data included questionnaires containing open-ended and closed-ended questions with the quantitative section of the instrument utilizing an ordinal scale format.

FINDINGS

The study sought to establish the effect of technology adoption on Green Public Procurement effectiveness in the County Government of Kakamega. The study findings were as tabulated in table 1.

Table 1: Technology Adoption and Green Public Procurement Effectiveness

Statements		SD	D	U	A	SA	Total	Mean	Std Dev
The use of computerized procurement systems demonstrates effective use of information technology	F %	0	0	8	19	46	73	3.80	-1.047
IT plays a great role towards supporting adoption of centralized procurement systems	F %	0	0	8	19	46	73	3.79	-1.074
IT has reached almost every aspect of procurement and may enhance and deepen the effort of procurement reform	F %	0	0	8	22	44	73	4.04	-0.342
Technology adoption on green public procurement helps in information exchange	F %	0	2	6	34	31	73	3.93	-0.346
Staff competence in use of information technology helps in adoption on green public procurement	F %	0	2	6	34	31	73	4.18	-0.591
Knowledge sharing between institutions by information technology helps in adoption on green public procurement	F %	0	0	9	25	39	73	4.00	-0.577
Information technology that is updated helps in adoption on green public procurement.	F %	0	0	5	47	87	73	4.15	-0.404
Technology adoptions have great impact effectiveness of the Green Public Procurement effectiveness department	F %	0	0	3	25	46	73	4.14	-0.010

My organization has a well improved information technology that helps in adoption on green public procurement	F	5	11	21	27	10	73	4.50	-0.346
	%	7.2	14.4	28.1	36.7	13.7	100	90.0	
The nature of Information technology determines adoption on green public procurement	F	0	0	8	24	41	73	4.48	-0.591
	%	0	0	10.8	33.1	56.1	100	89.6	

From the above results, the standard deviation results showed that the data was within a considerable range of between -2 and +2 implying that the data proved normal univariate distribution.

The study findings revealed that 76.0% (mean=3.80) were of the view that the use of computerized procurement systems demonstrates effective use of information technology, 75.8% (mean=3.79) were of the view that IT plays a great role towards supporting adoption of centralized procurement systems, 80.8% (mean=4.04) were of the view that IT had reached almost every aspect of procurement and may enhance and deepen the effort of procurement reform, 78.6% (mean=3.93) were of the view that technology adoption on green public procurement helps in information exchange, 82.6% (mean=4.18) were of the view that staff competence in use of information technology helps in green public procurement, 80.0% (mean=4.00) were of the view that knowledge sharing between institutions by information technology helps in adoption on green public procurement, 83.0% (mean=4.15) were of the view that information technology that is updated helps in green public procurement effectiveness, 82.8% (mean=4.14) were of the view that technology adoptions have great impact effectiveness, 90.0% (mean=4.50) were of the view that their organization has a well improved information technology that helps in green public procurement whereas 89.6% (mean=4.48) were of the view that the nature of Information technology determines on green public procurement.

These study findings indicated that majority of the respondents believed that their organization had a well improved information technology that helps in

green public procurement. This implies that for a procurement organization to operate both efficiently and effectively in such a complex environment useful structures need to be created and suitable instruments used. Information technology can have an important function in this regard. Used appropriately it can offer: smoother and faster process flow, efficient distribution of information, decentralization of tasks and decisions, increased transparency and better control. In addition, information technology helps not only to support internal processes, but also those involving business partners.

These study findings were in consonance with findings by Golder (2013) which asserts that, organizations that fail to integrate procurement functions with information communication technology systems like electronic data interchange, employs manual procurement procedures that are inefficient and ineffective and leads this to wastage of procurement funds since the procurement processes are characterized by a low degree of transparency. According to Ken (2013), IT has reached almost every aspect of procurement and may enhance and deepen the effort of procurement reform. Chang (2014) affirms that, IT plays a great role towards supporting adoption of centralized procurement systems in public sector organizations. Centralized procurement system leads to a central procurement data base that creates a favorable environment for effective automation of procurement processes.

According to Baily (2013), organization with effective IT infrastructure can easily automate its procurement functions by implementing an Enterprise Resource Planning (ERP) system. ERP is a system that integrates

all organizational functions into a single system to serve the needs of each different department within the enterprise. ERP is more of a methodology than a piece of software, although it does incorporate several software applications, brought together under a single, integrated interface.

Green Public Procurement Effectiveness

The study finally sought to determine the indicators of Green Public Procurement effectiveness in the County Government of Kakamega. The study results were as tabulated in table 2.

Table 2: Green Public Procurement Effectiveness

Statements		SD	D	U	A	SA	Total	Mean	Std Dev
Department purchases environmentally friendly products and services	F %	4	6	12	31	21	73	3.99	-0.971
		5	8.6	15.8	42.4	28.1	100	79.8	
Efficient Green Public Procurement policies and practices are critical for good public financial management and effective budget implementation	F %	3	9	11	44	6	73	2.81	-0.439
		4.3	12.2	15.1	60.4	7.9	100	56.2	
There are effective procurement policies for supporting effective implementation of Green Public Procurement practices	F %	3	9	11	44	6	73	2.97	-0.546
		4.3	12.2	15.1	60.4	7.9	100	59.4	
The department sets environment impact standards among contractors it deals with	F %	8	12	15	37	2	73	2.80	-0.167
		10.8	16.5	20.1	50.4	2.2	100	56.0	
Green Public Procurement adoption results quality products supply	F %	0	2	11	32	29	73	2.88	-0.123
		0	2.2	15.1	43.2	39.6	100	57.6	
The entire management team is committed towards improving Green Public Procurement effectiveness	F %	4	4	8	30	27	73	3.00	-0.971
		5	5	11.5	41.7	36.7	100	60.0	
Products are bought for which the packaging material is bio-degradable or recyclable	F %	0	0	3	25	46	73	3.91	-0.439
		0	0	3.6	33.8	62.6	100	78.2	
Products favored provide information about their effect on the environment	F %	4	4	6	25	35	73	3.38	-0.546
		5	5	8.6	33.8	47.5	100	67.6	
Purchase of materials or parts are from suppliers who are compliant with environmentally related legislation	F %	5	11	21	27	10	73	3.02	-0.167
		7.2	14.4	28.1	36.7	13.7	100	60.4	
Organization develops and maintains a database of suppliers in which information relating to environmental conduct is maintained	F %	0	0	6	25	41	73	3.36	-0.123
		0	0	8.6	34.5	56.8	100	67.2	

From the above results, the standard deviation results showed that the data were within a

considerable range of between -2 and +2 implying that the data proved normal univariate distribution.

The study findings indicated that 79.8% (mean=3.99) of the respondents were of the opinion that department purchases environmentally friendly products and services, 56.2% (mean=2.81) were of the opinion that efficient Green Public Procurement policies and practices were critical for good public financial management and effective budget implementation, 59.4% (mean=2.97) were of the opinion that there are effective procurement policies for supporting effective implementation of Green Public Procurement practices, 56.0% (mean=2.80) were of the opinion that the department sets environment impact standards among contractors it deals with, 57.6% (mean=2.88) were of the opinion that Green Public Procurement adoption results quality products supply, 60.0% (mean=3.00) were of then opinion that the entire management team is committed towards improving Green Public Procurement effectiveness, 78.2% (mean=3.91) were of the opinion that products are bought for which the packaging material is bio-degradable or recyclable, 67.6% (mean=3.38) were of the opinion that products favored provide information about their effect on the environment, 60.4% (mean=3.02) were of the opinion that purchase of materials or parts are from suppliers who are compliant with environmentally related legislation whereas 67.2% (mean=3.36) were of the opinion that organization develops and maintains a database of suppliers in which information relating to environmental conduct is maintained. These study results indicated that majority of the respondents were of the view that the department purchases environmentally friendly products and services.

These study findings were in line with findings by Green, Morton and New (2000) who noted that, use of consumer pressure in greening the economy had long been advocated by environmentalists. The traditional image of the consumer is viewed as the primary agent of environmental change is inadequate. Efforts to green the economy require an understanding of corporations and public

organizations as consumers as well as an understanding of individuals as consumers. Their study sets out the arguments for treating all organizations as consumers and as a dominant but underemphasized force in greening the economy. It then considers organizational consumption in the context of supply chains, with respect to the issue of agency within the organization and with respect to the transmissions of market signals for innovation. The discussion makes clear the importance of considering the inter-organizational context and ways in which this context both constrains and enables green purchasing initiatives.

Test of Hypotheses

Ho₁: There is no relationship between technology adoption and Green Public Procurement effectiveness in the County Government of Kakamega. The study findings indicated that there was a statistically significant relationship between technology adoption and Green Public Procurement effectiveness ($p=0.000$). The study therefore rejected the null hypothesis and accepted the alternate hypothesis which showed that there was a relationship between technology adoption and Green Public Procurement effectiveness in the County Government of Kakamega.

CONCLUSION

Although technology-based procurement systems had not yet been adopted on a broad scale, the general attitude of buying organizations was positive and inquisitive. Organizations were beginning to realize the potential of emerging technologies to change public procurement. Procurement systems promise to bring organizations one step closer to a scenario of integrated, yet modularized systems, which are flexible enough to handle all the different kinds of purchasing routines an organization usually has in place. Built upon open standards, emerging technologies also promise flexibility when it comes to

adding or changing new functions and partners to keep up with changing business requirements.

RECOMMENDATION

The study recommends that counties should formulate and implement a Green Public Procurement policy to support Green Public Procurement initiatives. County government should

ensure implementation of the Green Public Procurement strategy in the whole manufacturing industry by drafting and implementing Green Public Procurement policy enforceable at law.

At the organizational level, management should train and develop staff on Green Public Procurement and its importance.

REFERENCES

- Akech, J. M. (2004). Development partners and governance of public procurement in Kenya: enhancing democracy in the administration of aid. *NYUJ Int'l. L. & Pol.*, 37, 829.
- Arisa, E., & Muturi, W. (2013). Constraints Influencing the Implementation of Green Public Procurement- A Survey of Public Institutions in Kisii, Kenya.
- Azevedo, S. G., Govindan, K., Carvalho, H., & Cruz-Machado, V. (2013). Ecosilient Index to assess the greenness and resilience of the upstream automotive supply chain. *Journal of Cleaner Production*, 56, 131-146.
- Balogun, A., Olufowobi, S., & Nwachukwu, C. (2006). 200 burnt in Lagos pipeline fire. *The Punch*, 41 (13 May).
- Barney, J. (2001). Firm resources and sustained competitive advantage. *Journal of management*, 17 (1), 99-120.
- Basheka, B. C. (2009). Procurement planning and local governance in Uganda: A factor analysis approach. *International Journal of Procurement Management*, 2 (2), 191-209.
- Becker, G. (1976). Toward a more general theory of regulation. *The Journal of Law and Economics*, 19 (2), 245-248.
- Berry, L. L., & Parasuraman, A. (2004). *Marketing services: Competing through quality*. Simon and Schuster.
- Bin, L., & Qinghua, Z. (2009). Empirical Study on Practices and Performances of Green Purchasing among Manufacturing Enterprises [J]. *Chinese Journal of Management*, 6 (7), 924-929..
- Björklund, M. (2011). Influence from the business environment on environmental purchasing: Drivers and hinders of purchasing green transportation services. *Journal of Purchasing and Supply Management*, 17 (1), 11-22.
- Boer, L., & Telgen, J. (2008). Purchasing practice in Dutch municipalities. *Journal of supply chain management*, 34 (1), 31-36.
- Bogdan, R.C.& Biklen,S.K.(2003). *Qualitative Research for Education: An introduction to Theories and Methods* (4th ed.). NewYork: Pearson Education group.
- Bolton, P. (2006). Government procurement as a policy tool in South Africa. *Journal of public procurement*, 6 (3), 193-217.

- Bolton, P. (2008, February). Protecting the environment through public procurement: the case of South Africa. Blackwell Publishing Ltd. *Natural Resources Forum*; Vol. 32, No. 1, pp. 1-10.
- Boyne, G. A. (2002). Public and private management: what's the difference?. *Journal of management studies*, 39 (1), 97-122.
- Brammer, S., & Walker, H. (2011). Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations & Production Management*, 31 (4), 452-476.
- Brammer, S., & Walker, H. (2011). Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations & Production Management*, 31 (4), 452-476.
- Buchanan, L. (2002). Vertical trade relationships: the role of dependence and symmetry in attaining organizational goals. *Journal of Marketing Research*, 65-75.
- Carter, C. R., & Jennings, M. M. (2004). The role of purchasing in corporate social responsibility: a structural equation analysis. *Journal of business Logistics*, 25 (1), 145-186.
- Catlin, A., Cowan, C., Hartman, M., & Heffler, S. (2008). National health spending in 2006: a year of change for prescription drugs. *Health Affairs*, 27 (1), 14-29.
- Chen, C. (2001). Design for the environment: A quality-based model for green product development. *Management Science*, 47 (2), 250-263.
- Cooper, D. R., Schindler, P. S., & Sun, J. (2006). *Business research methods*. New York: McGraw-Hill Irwin (Vol. 9).
- Daft, R. L., Murphy, J., & Willmott, H. (2010). *Organization theory and design*. Cengage learning EMEA.
- De Brito, M. P., Carbone, V., & Blanquart, C. M. (2008). Towards a sustainable fashion retail supply chain in Europe: Organization and performance. *International journal of production economics*, 114 (2), 534-553.
- Donaldson, T., & Preston, L. E. (2005). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review*, 20 (1), 65-91.
- Eisenhardt, K. M. (2009). Agency theory: An assessment and review. *Academy of management review*, 14 (1), 57-74.
- Fisher, R. A., Corbet, A. S., & Williams, C. B. (2003). The relation between the number of species and the number of individuals in a random sample of an animal population. *The Journal of Animal Ecology*, 42-58.
- Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge university press.
- Gattiker, T. F., Tate, W., & Carter, C. R. (2008). Supply management's strategic role in environmental practices. *Center for Advanced Purchasing Studies*.
- Gordon Murray, J. (2000). Effects of a green purchasing strategy: the case of Belfast City Council. *Supply Chain Management: An International Journal*, 5 (1), 37-44.
- Government of Kenya. (2009). Public Procurement Policy, Nairobi. Government Printer.
- Hamel, G., & Prahalad, C. K. (2004). Competing for the future Harvard business school press. *Boston, MA*.

- Handfield, R., Sroufe, R., & Walton, S. (2005). Integrating environmental management and supply chain strategies. *Business strategy and the environment*, 14 (1), 1-19.
- Hart, S. L. (2005). Innovation, creative destruction and sustainability. *Research-Technology Management*, 48 (5), 21-27.
- Held, D., McGrew, A., Goldblatt, D., & Perraton, J. (2009). Global transformations. *ReVision*, 22 (2), 7-7.
- Henriques, I., & Sadorsky, P. (2006). The determinants of an environmentally responsive firm: an empirical approach. *Journal of environmental economics and management*, 30 (3), 381-395.
- Ho, L. W., Dickinson, N. M., & Chan, G. (2010, February). Green Public Procurement in the Asian public sector and the Hong Kong private sector. In *Natural Resources Forum* (Vol. 34, No. 1, pp. 24-38). Blackwell Publishing Ltd.
- Horton Jr, A. M., & Benedict, R. H. (2002). Reliability and Validity in Neuropsychological Assessment.
- Iraldo, F., Testa, F., & Frey, M. (2009). Is an environmental management system able to influence environmental and competitive performance? The case of the eco-management and audit scheme (EMAS) in the European Union. *Journal of Cleaner Production*, 17 (16), 1444-1452.
- Ireland, R. D., & Webb, J. W. (2007). A multi-theoretic perspective on trust and power in strategic supply chains. *Journal of Operations Management*, 25 (2), 482-497.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3 (4), 305-360.
- Jensen, M. C., & Meckling, W. H. (1979). Theory of the firm: Managerial behavior, agency costs, and ownership structure. In *Economics social institutions* (pp. 163-231). Springer, Dordrecht.
- Johnsen, R. E., & Ford, D. (2002, September). Developing the concept of asymmetrical and symmetrical relationships: Linking relationship characteristics and firms' capabilities and strategies. In *Proceedings from the 18th Annual IMP Conference. Graduate School of Business and Management, 5th-7th September, Dijon France*.
- Jones, T. M. (2000). Corporate social responsibility revisited, redefined. *California management review*, 22 (3), 59-67.
- Kahiri, J., Arasa, R., Ngugi, P., & Njeru, S. E. (2014). Procurement Policies and implementation of effective procurement practices in tertiary Public Training Institutions in Kenya.
- Kasisi, R., Benjamin, M. M., & Mwangi, G. H. Factors Affecting the Performance of the Procurement Function in Government Organizations: A Case Study of National Oil Corporation of Kenya.
- Kaumbuthu, P., & Wanyoike, D. (2013). Effects Of Green Public Procurement Adoption In Public Sector: A Case Study Of Pyrethrum And Other Industrial Crops Directorate In Kenya.
- Kaye Nijaki, L., & Worrel, G. (2012). Procurement for sustainable local economic development. *International Journal of Public Sector Management*, 25(2), 133-153.

- Kim, W. G., & Cha, Y. (2002). Antecedents and consequences of relationship quality in hotel industry. *International Journal of Hospitality Management*, 21(4), 321-338.
- Kioko, N. J., & Were, S. (2014). Factors affecting efficiency of the procurement function at the public institutions in Kenya (a case of Supplies Branch in Nairobi). *International Journal of Business & Law Research*, 2 (2), 1-14.
- KIPPRA, (2011). *Public Procurement Policy in Kenya: The need for a coherent policy framework*. Policy brief no.3/2011
- Knudsen, D. (2003). *Improving procurement performance with e-business mechanisms*. Department of Industrial Management and Logistics, Lund Institute of Technology.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Kumar, N., Scheer, L. K., & Steenkamp, J. B. E. (2005). The effects of perceived interdependence on dealer attitudes. *Journal of marketing research*, 348-356.
- Lawson, C., & Lorenz, E. (2009). Collective learning, tacit knowledge and regional innovative capacity. *Regional studies*, 33 (4), 305-317.
- Lee, K. H. (2009). Why and how to adopt green management into business organizations? The case study of Korean SMEs in manufacturing industry. *Management Decision*, 47 (7), 1101-1121.
- Lefever, S., Dal, M., & Matthiasdottir, A. (2007). Online data collection in academic research: advantages and limitations. *British Journal of Educational Technology*, 38 (4), 574-582.
- Lozano, M., & Vallés, J. (2007). An analysis of the implementation of an environmental management system in a local public administration. *Journal of environmental management*, 82 (4), 495-511.
- Lysons, K., & Farrington, B. (2006). *Purchasing and supply chain management*. Pearson Education.
- Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines. *The lancet*, 358 (9280), 483-488.
- Marron, D. (2004). Greener public purchasing as an environmental policy instrument. *OECD Journal on Budgeting*, 3 (4), 71-105.
- Marshall, M. N. (2006). Sampling for qualitative research. *Family practice*, 13 (6), 522-526.
- McDonald, F. (2009). The importance of power in partnership relationships. *Journal of General Management*, 25 (1), 43-59.
- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Information technology and organizational performance: An integrative model of IT business value. *MIS quarterly*, 28 (2), 283-322.
- Menon, A. (2013). Enviropreneurial Marketing Strategy: The Emergence of Corporate Environmentalism as Market Strategy. *Journal of Marketing*. 61, 51-67.
- Migosi, J. A., Ombuki, C. N., Ombuki, K. N., & Evusa, Z. (2013). Determinants of non-compliance of public procurement regulations in Kenyan secondary schools.

- Min, H., & Galle, W. P. (2007). Green purchasing strategies: trends and implications. *Journal of Supply Chain Management, 33* (2), 10-17.
- Mugenda, O.M. & Mugenda, B.G. (2013). *Research methods; quantitative and qualitative approaches*. Africa Centre of Technology (ACTS), Nairobi Kenya.
- Odhiambo, S. A. (2008). A Survey of the Extent to Which Floricultural Firms in Kenya Practice Green Marketing. *Unpublished MBA Project*.
- Odhiambo, S. A. (2008). A survey of the extent to which floricultural firms in Kenya practice green marketing: Unpublished University of Nairobi, Kenya. *MBA Project*.
- Odhiambo, W., & Kamau, P. (2003). Public Procurement.
- Onyekpe, B. O., & Dania, L. P. (2007). Flowline corrosion problems: a case study of Shell Petroleum Development Company, Nigeria. *Journal of Quality in Maintenance Engineering, 3*(3), 152-162.
- Onyekpe, B. O., & Dania, L. P. (2009). Flowline corrosion problems: a case study of Shell Petroleum Development Company, Nigeria. *Anti-Corrosion Methods and Materials, 46* (3), 205-211.
- Orodho, A. J., & Kombo, D. K. (2002). Research methods. Nairobi: Kenyatta University, Institute of Open Learning. *Orodho, AJ (2012). Technique of Writing a Thesis and Reports Pg, 21*.
- Peltzman, S. (1976). Toward a more general theory of regulation. *The Journal of Law and Economics, 19* (2), 211-240.
- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International journal of operations & production management, 25* (9), 898-916.
- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International journal of operations & production management, 25* (9), 898-916.
- Rimington, M., Carlton Smith, J., & Hawkins, R. (2006). Corporate social responsibility and sustainable food procurement. *British Food Journal, 108* (10), 824-837.
- Roodhooft, F., & Van den Abbeele, A. (2006). Public procurement of consulting services: Evidence and comparison with private companies. *International Journal of Public Sector Management, 19* (5), 490-512.
- Saunders, M (2012). Strategic purchasing & supply chain management.
- Savas, E. S., & Savas, E. S. (2000). Privatization and public-private partnerships. New York: Chatham House.
- Srivastava, S. K. (2007). Green supply-chain management: a state-of-the-art literature review. *International journal of management reviews, 9* (1), 53-80.
- Stern, P., Hellman, J., Rijnders-Nagle, M., Terrell, M., & Astrom, T. (2011). How public procurement can stimulate innovative services. *Nordic Innovation Centre Report*.
- Swanson, M., Weissman, A., Davis, G., Socolof, M. L., & Davis, K. (2005). Developing priorities for greener state government purchasing: a California case study. *Journal of Cleaner Production, 13*(7), 669-677.

- Testa, F., & Iraldo, F. (2008). Is an environmental management system able to influence environmental and competitive performance? The case of the eco-management and audit scheme (EMAS) in the European Union. *Journal of Cleaner Production*, 17 (16), 1444-1452.
- Testa, F., Iraldo, F., Frey, M., & Daddi, T. (2012). What factors influence the uptake of GPP (Green Public Procurement) practices? New evidence from an Italian survey. *Ecological Economics*, 82, 88-96.
- Testa, F., Iraldo, F., Frey, M., & Daddi, T. (2012). What factors influence the uptake of GPP (Green Public Procurement) practices? New evidence from an Italian survey. *Ecological Economics*, 82, 88-96.
- Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., ... & Goldsmith, C. H. (2010). A tutorial on pilot studies: the what, why and how. *BMC medical research methodology*, 10 (1), 1.
- Thai, K. V. (Ed.). (2008). *International handbook of public procurement*. CRC Press.
- Thomson, J., & Jackson, T. (2007). Sustainable procurement in practice: lessons from local government. *Journal of Environmental Planning and Management*, 50 (3), 421-444.
- Walker, H., & Brammer, S. (2009). Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal*, 14 (2), 128-137.
- Walker, H., & Brammer, S. (2009). Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal*, 14 (2), 128-137.
- Walker, H., & Brammer, S. (2012). The relationship between sustainable procurement and e-procurement in the public sector. *International Journal of Production Economics*, 140 (1), 256-268.
- Walker, H., Di Sisto, L., & McBain, D. (2008). Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors. *Journal of purchasing and supply management*, 14 (1), 69-85.
- Walley, N., & Whitehead, B. (2004). It's not easy being green. *Reader in Business and the Environment*, 36, 81.
- Zhu, Q., Sarkis, J., & Geng, Y. (2005). Green supply chain management in China: pressures, practices and performance. *International Journal of Operations & Production Management*, 25 (5), 449-468.
- Zhu, Q., Sarkis, J., & Lai, K. H. (2007). Green supply chain management: pressures, practices and performance within the Chinese automobile industry. *Journal of cleaner production*, 15 (11-12), 1041-1052.