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Factors affecting adoption of green procurement practices in energy sector in Kenya, A case study of Kenya Pipeline Company

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Abstract

This study sought to determine factors affecting adoption of green procurement practices in energy sector in Kenya; a case study of Kenya Pipeline Company. The specific objectives were to investigate the effect of technological advancement, procurement policies, employee competencies, financial performance and operational cost on adoption of green procurement practices in energy sector in Kenya. The study will be of significance to the management of Kenya Pipeline Company, and other researchers.

The study adopted a descriptive research design. The target population for the study was 300 employees of Kenya Pipeline Company, from which a sample size of 75 respondents was selected using stratified random sampling method. The instruments of data collection were questionnaires. The questionnaire comprised of both open ended and closed ended questions. The study findings were analyzed using quantitative and qualitative methods and presented in form of tables and figures.

According to the findings of the study 87% of the respondents agreed that technology advancement affect adoption of green procurement practices in energy sector in Kenya while 13% disagreed, procurement policies by 84% while 16% disagreed, employee competencies by 89% while 11% disagreed, 83% of the respondents agreed that financial performance affects adoption of green procurement practices in energy sector in Kenya. Ninety-four percentage (94%) of the respondents agreed that operational cost affect adoption of green procurement practices in energy sector in Kenya while 6% disagreed.

The study recommends the management should have their systems automated. In regard to procurement policies the study recommends the management to review legislations to ensure compliance with the international procurement systems requirement. In regard to employee competencies the study recommends that the management should employ professional trained procurement staff and continuously train the staff on emerging issues on public procurement practices. In regard to financial performance the study recommends that the management provide a good working environment for employees so as to enhance their efficiency and performance. In regard to operational costs the study recommends that the management should make use of automation so as to reduce their operational costs.

Keywords: Green Procurement, Energy Sector

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1. Background

Green procurement is a spending and investment process typically associated with public policy, although it is equally applicable to the private sector. Organizations practicing green procurement meet their needs for goods, services, utilities and works not on a private cost-benefit analysis, but with a view to maximizing net benefits for themselves and the wider world. In doing so they must incorporate extrinsic cost considerations into decisions alongside the conventional procurement criteria of price and quality, although in practice the green procurement impacts of a potential supplier's approach are often assessed as a form of quality consideration. These considerations are typically divided thus: environmental, economic and social (Burt, 2018).

There is no single definition of green procurement procurement– and applications vary across organizational hierarchy and sector. However, there is a general acceptance that it involves a higher degree of collaboration and engagement between all parties in a supply chain. Many businesses have adopted a broad interpretation of green procurement and have developed tools and techniques to support this engagement and collaboration (Brent, 2015).

A study by Marron (2013) environmental concerns are the dominant macro-level justification for green procurement; born out of the growing 21st century consensus that humanity is placing excessive demands on available resources through green procurement but well-established consumption patterns. This is a sufficiently influential issue that environment-centric procurement (green procurement procurement) is sometimes seen to stand alone from green procurement. The most straightforward justification for green procurement is as a tool with which to address climate change, but it offers the broader capacity to mitigate over-exploitation of any and all scarce resources. Green procurement is also used to address issues of social policy, such as inclusiveness, equality, international labor standards and diversity targets, regeneration and integration. Examples include addressing the needs – whether employment, care, welfare or other – of groups including ethnic minorities, children, the elderly, those with disabilities, adults lacking basic skills, and immigrant populations (Miles, 2020).

In the European Union (EU), the potential of green procurement public procurement was first underlined in the European Commission's announcement from 2003 concerning integrated product policies, encouraging member states to adopt national action plans for such procurements before the end of 2006. The new European Legal Framework for Public Procurement contains instructions on how public procurers can include environmental considerations in their processes and procedures. Additionally, the EU"s strategy for green procurement development has a political objective to increase the EU"s green procurement public procurement average by 2010 to member state best practice in 2006 (Carter, 2018).

Green procurement is as applicable to the private sector as the public sector, and certainly its proponents aspire to seeing its application across all areas of the economy. Influencing procurement practice within a private-sector firm is not straightforward for governments, meaning that the companies themselves often have to be self-motivated to embrace green procurement. The UK's Green procurement National Action Plan argues that it is "something the best of the private sector is already doing - whether through enlightened leadership or shareholder pressure". It also argues that government purchasing power (circa £150bn in the UK alone) can apply green procurement principles to present a persuasive case to those in the private sector resisting green procurement practice (Carlson, 2014).

In Africa, various studies have been done on green procurement policy according to research undertaken by Harris (2016) stated that, the municipalities of Cape Town, Thekwini Municipality, Ekurhuleni, Nelson Mandela Metro (Port Elizabeth) and Pretoria (Tshwane), all members of ICLEI (Local Governments for Green procurement), committed themselves at the World Conference on Green procurement Development (2018) to some form of green procurement. Gauteng Provincial Government apparently also committed to implementing green procurement public procurement. While certain government bodies seem to have progressed in developing green procurement policies, the implementation of these policies appears to be less than complete. Where other government policies exist that support green procurement public procurement, these have not been explicitly developed for the purpose of green procurement or recognized as supporting green procurement. This suggests that the process of developing and implementing environmental procurement criteria has not been effectively rolled out within the mentioned government bodies. One example provided was of a government body that, although having committed publicly to the development of a green procurement policy, simply did not have the capacity to drive the work and the programme was placed on hold (Clemens, 2016).

In Kenya few studies have been done on various organizations pertaining to the green procurement. many private firms in Kenya are working to improve the environmental performance of their operations and products and green procurement has been a logical extension of this work. Similar to public buyers, private sector organizations have in the last two decades adopted green procurement practices for specific products (for example, recycled-content office paper, renewable energy, paints and cleaners), with a

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few others have developed green procurement policies that cover a wider range of products, services and environmental issues. As the business benefits of these efforts become better known, green procurement is continuing to grow in the private sector (Akech, 2015).

1.1Profile of Kenya Pipeline Company

The Kenya Pipeline Company Limited is a State Corporation established on 6th September, 1973 under the Companies Act (CAP 486) of the Laws of Kenya and started commercial operations in 1978. The Company is 100% owned by the Government and complies with the provisions of the State Corporations Act (Cap 446) of 1986. The Company operations are also governed by relevant legislations and regulations such as the Finance Act, the Public Procurement Regulations, and Performance Contracting. The main objective of setting up the Company was to provide efficient, reliable, safe and cost effective means of transporting petroleum products from Mombasa to the hinterland. In pursuit of this objective, the Company constructed pipeline network, storage and loading facilities for transportation, storage and distribution of petroleum product. The mission is transforming lives through safe and efficient delivery of quality oil and gas from source to customer. The vision is to be "Africa's premier oil and Gas Company.

See annex Figure 1.1 Organization Structure of Kenya Pipeline Company

1.2Statement of the Problem

The objective of the policy on green procurement is to advance the protection of the environment and support green procurement development. Green procurement house gases include any of the atmospheric gases that contribute to the 'green procurement house effect. As green procurement house gases accumulate in the atmosphere, they contribute to climate change. Resources include raw materials such as timber, minerals and metals, water and energy sources. Resource efficiency means using these materials in the most productive and economical way possible, keeping quantities consumed and waste to a minimum. Ideally an item should be resource-efficient throughout its life from design and manufacture through to use and disposal. The amount of resources consumed by a good during its life is an important issue because this impacts the burden of human activity on the environment. Resource efficiency is an environmental priority because resources are dwindling, while world population continues to grow and place more demands on those same resources (Preuss, 2013).

There are several potential problems with green procurement program management system issue regulations either jointly or on their own, causing policy overlaps, management duplication, and even conflicts among agencies. There is also a lack of communication and coordination among private procurement agencies. Communication involves the exchange of information among procurement personnel regarding green procurement policies, method, and procedures. Little attention is paid to information about green procurement, and little understanding is present among procurement personnel (Carlson, 2014).

Reducing these unemployment rates is one of the main challenges to be tackled under Kenya Vision 2003, a national strategic development plan with the objective to provide a high-quality life to all its citizens by the year 2030.At the inter-ministerial workshop, the ILO Green procurement Jobs Programm highlighted the need to invest in employment to achieve a green procurement economy as natural resources, economy and employment are interdependent. Kenya's economy is highly reliant on natural resources and therefore sensible to any kind of natural phenomena. A drought in the year 2000 caused, for example, a significant drop in the GDP growth rate from an average of 3% in previous years to 0.2%, provoking also a rapid increase in unemployment. In ILO's view, a careful management of natural resources combined with the creation of green procurement jobs will therefore contribute to the reduction of unemployment and support green procurement development. The nature tourism, a highly employment intensive sector, has the potential to become an important sector in Kenya's new green procurement economy; worldwide its demand is growing by 20 % (Chandram, 2014). Local studies so far done have focused on procurement in general (Akech, 2015). Available evidence point to the issues of environment being at the heart of most governments and international agencies agenda. Whereas Kenya is expected to be in this league, evidence available points to weak policy and institutional capacity. No known studies have been conducted factors affecting adoption of green procurement practices in energy sector in Kenya and therefore the need to carry out the current study and fill the gap.

1.3 Objectives of the Study

1.3.1 General Objective

The main objective of the study was to determine factors affecting adoption of green procurement practices in energy sector in Kenya.

1.3.2 Specific Objectives

i. To investigate the effect of technological advancement on adoption of green procurement practices in energy sector in Kenya.
ii. To establish the effect of procurement policies on adoption of green procurement practices in energy sector in Kenya.
iii. To determine the effect of employee competencies on adoption of green procurement practices in energy sector in Kenya.
iv. To examine the effect of financial performance on adoption of green procurement practices in energy sector in Kenya.

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v. To determine the effect of operational cost on adoption of green procurement practices in energy sector in Kenya.

1.4 Research Questions

i. How does technological advancement affect adoption of green procurement practices in energy sector in Kenya?
ii. To what extent does procurement policies affect adoption of green procurement practices in energy sector in Kenya?
iii. How does employee competencies affect adoption of green procurement practices in energy sector in Kenya?
iv. To what extent does financial performance affect adoption of green procurement practices in energy sector in Kenya?
v. How does operational cost affect adoption of green procurement practices in energy sector in Kenya?

1.5 Significance of the Study

1.5.1 The Management of Kenya Pipeline Company

The study findings will be of great importance to Kenya Pipeline company managers as they will be enlightened on the factors affecting adoption of green procurement practices in energy sector in Kenya. This will ensure that the main objective of the study will have been accomplished as the factors affecting adoption of green procurement practices in energy sector in Kenya will established.

1.5.2 Other Public Institutions

The study findings will be of great importance to other public institutions as they will bring to perspective the factors affecting adoption of green procurement practices in energy sector in Kenya. These will ensure green procurement policies are implemented.

1.5.3 Other Researchers

The study will provide the background information to other researchers and scholars who may want to carry out further research on the factors affecting adoption of green procurement practices in energy sector in Kenya. The study will facilitate individual researchers to identify gaps in the current research work and carry out further research in those areas.

1.6 Limitations of the Study

1.6.1 Lack of Cooperation

Some of the respondents were not willing to cooperate because of lack of interest in the research study. Some of the respondents also claimed that the study is of no significance to them and that it was a waste of their time. To mitigate this limitation the researcher gave an explanation to them of how they could stand to gain by participating in this research study.

1.6.2 Confidentiality

The respondents didn't give adequate information to what they said is leaking of confidential information. The researcher persuaded them that the information is needed for academic purposes and nobody shall be accused for any information provided. The researcher also shown them the introduction letter from the college to convince them to provide the information freely.

1.6.3 Bureaucracy

It was a serious problem to gain access to the premises since entry was accessed by staff members by use of job cards and other relevant documents of agency like working pin code which the researcher did not have. The researcher overcame this producing an introduction letter from the college to prove that she was undertaking an academic research project from Kenya Institute of Management.

1.7 Scope of the Study

The study sought to determine factors affecting adoption of green procurement practices in energy sector in Kenya with main focus on Kenya Pipeline Company located in industrial area, Nairobi along Lunga Lunga road. The target population for the study was 300 employees from managerial hierarchy of top-level management, middle level management and support staff. The study was undertaken between the months of January 2022 to August 2022.

2. Literature Review

2.1 Review of Theoretical Literature

2.1.1 Technological Advancement

Technological advancement is artificial intelligence, geotargeting, automation, and other advancements in information technology specifically set the stage for more technological evolution. ICT software that supports green procurement should be able to ensure processes are conducive to the environment and its inputs and outputs are not harmful to the environment, such are use of e-procurement. This reduces use of paper hence less destruction of the forests for papers. The hardware component should have the capacity to support the software and emerging technologies and when it has exhausted its life cycle, it should be recyclable to something usable. Many organizations dispose of their equipment's too early and contribute to unnecessary waste, even when a system upgrade required does not have to be implemented within the whole enterprise (Salant, 2014).

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 (Jennings, 2015).

A study by Jayaraman (2013) states that 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

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during execution of procurement procedures. 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.

Technological innovation plays an important role in reducing the costs of both types of environmental protection, and thus promoting green procurement growth. One reason that upper-middle and high income countries have been able to achieve better environmental quality for some pollutants such as local air quality is through their use of advanced pollution abatement techniques. While the use of these technologies often entails initial costs, which can engender debate over near term gains relative to reduced disposable income, the benefits they provide, which may come in the form of improved health and quality of life as opposed to increased disposable income, are often substantial. Similarly, the development of more efficient appliances, vehicles, and industrial equipment allows for greater energy efficiency and lower cost of resource use. Many of the fixed costs of technology development have already been paid by developed countries. Thus, in many cases, it is the transfer of these technologies to developing countries that is important (Lozano, 2017).

A study by Akech (2015) examined the effect of technology adoption on green procurement 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 procurement 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 procurement Public Procurement products. The study recommended that companies should formulate and implement a green procurement Public Procurement policy to support green procurement Public Procurement initiatives. At the organizational level, management should train and develop staff on green procurement Public Procurement and its importance. It was hoped that findings enabled organizations to understand better the importance of green procurement 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 procurement Public Procurement (Amtzen, 2015).

2.1.2 Procurement Policies

Procurement policies are simply the rules and regulations that are set in place to govern the process of acquiring goods and services needed by an organization to function efficiently. The exact process will seek to minimize expenses associated with the purchase of those goods and services by using such strategies as volume purchasing; the establishment of a set roster of vendors, and establishing reorder protocols that help to keep inventories low without jeopardizing the function of the operation (Bansal, 2020).

Both small and large companies as well as non-profit organizations routinely make use of some sort of procurement policy. There is no correct way to establish a procurement policy, factors such as the size of the business, the availability of vendors to supply necessary goods and services, and the cash flow and credit of the company will often influence the purchasing procurement approach. The size of the company is likely to make a difference in the formation of procurement policy, in that a small company may not be able to command the volume purchase discounts that a large corporation can manage with relative ease (Jennings, 2015).

A study by Stafford (2020) green procurement is set within the context of achieving value for money. It requires the integration of environmental performance considerations into the procurement process including planning, acquisition, use and disposal. In this context, value for money includes the consideration of many factors such as cost, performance, availability, quality and environmental performance. Green procurement also requires an understanding of the environmental aspects and potential impacts and costs, associated with the life cycle assessment of goods and services being acquired. In addition, the supporting administrative processes and procurement methods can also offer opportunities to reduce the environmental impacts of government operations.

Procurement policy benefits the organization by keeping costs in line and clearly defining how purchases will be made. As the needs of the entity change, there is a good chance that the procurement policy will be adjusted to meet those new circumstances. This is necessary to make sure the policy continues to function in the best interests of the company or non-profit organization and keep the acquisition process simple and orderly. According to PPOA (2007), the public procurement system in Kenya has been undergoing consistent reforms with the global trend since mid-1990s, most notably within the periods covering 1997-2001 and 2005. Previous to these reforms, the legal framework governing public procurement was very amorphous, providing a conducive environment for the perpetration of various malpractices in

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public procurement including the endemic corruption that characterized the system. The level of compliance with procurement regulations greatly influences the green practices in the procurement process (Zhu, 2016).

According to Odhiambo (2017), with the official launch of Public Procurement Reforms, the country set on the reform road in the area of public procurement by; putting in place a unified legal and regulatory framework to guide the reforms. This was realized through the gazettement of the Exchequer and Audit Act Public Procurement, Regulations (2001), which harmonized all the Treasury circulars and manuals governing procurement in the public sector. Putting in place an institution to oversee development and implementation of the public procurement policy in Kenya and improve transparency. This was realized through the creation of the Public Procurement Directorate (PPD) to oversee the public procurement process in Kenya and the Public Procurement Complaints, Review and Appeals Board (PPCRAB) to handle tendering disputes Act.

According to Rimmington (2020), the landmark in the reforms was in 2005 when the Public Procurement and Disposal Act (2005) was enacted by Parliament. The Act established an oversight body, the Public Procurement Oversight Authority (PPOA), Public Procurement Oversight Advisory Board and the Public Procurement Administrative Review Board. It amended all other laws relating to procurement in public entities ensuring that all of it is done under the umbrella of the Act thus widening the scope of application of the law and providing a proper basis for enforcement. With the gazettement of the subsidiary legislation entitled Public Procurement and Disposal Regulations 2006, the law became operational on 1st January, 2007.

According to Chandram (2014), the Public Procurement and Disposal Act, 2005 became operational on 1st January, 2007 with the gazettement of the Public Procurement and Disposal Regulations, 2006. This called for all public entities to strictly execute procurement functions according the Act. However, despite all these regulatory machines, the public sector procurement process is not in tandem with these legislations. According to Boyne (2014), over 50% of public enterprises in Kenya do not comply with procurement regulations and this has created corruption loopholes and other malpractices on procurement processes.

According to Akech (2015), the current public procurement framework in Kenya has recently been strengthened in a number of respects: With the enactment of the PPRA and Regulations, Kenya today has in place a sound and comprehensive legal framework for public procurement with a clear hierarchical distinction. The PPRA clearly establishes the procurement methods to be applied, advertising rules and time limits, the content of tender documents and technical specifications, tender evaluation and award criteria, procedures for submission, receipt and opening of tenders, and the complaints system structure and sequence. The PPRA and Regulations cover goods, works and services for all procurement using national funds. Both documents are published and widely distributed within government. The legal framework is complemented with a series of Standard Tender Documents (STDs) covering procurement of goods, works and services, and the responsibility for updating the STDs is clearly assigned to the PPRA.

As suggested by Berman (2020) the procurement policies employed by many public training institutions in UK determine the level of effectiveness in execution of the procurement practices. The study also notes that the level of procurement regulations compliance, level of top management support and the employed procurement procedures determine the nature of the employed procurement policies in many training institutions. Basal (2017) noted that over 70% of public and private companies in Britain and Germany have embraced effective procurement policies while in China only less than 30% of organizations have managed to successfully implement effective procurement policies.

According to Maignan (2014) many government organizations in United India and Malaysia lack effective procurement policies for supporting implementation of sustainable procurement policies. A study by Marron (2013) notes that in Africa many government corporations lack effective procurement policies and this influences implementation of ineffective procurement practices. Further, findings by Bian (2016) reveled that low level of procurement regulations compliance in many public training institutions in developing nations hampers effective execution of procurement functions and this impedes implementation of institutional development projects. Burt (2018) notes that application of poor procurement policies and lack of top management support does not promote effective green practices in the procurement process.

As suggested by Cabrita (2019) many procurement managers in Kenyan state corporations lack competitive knowledge and skills on how to formulate and embrace effective procurement policies in many public institutions in Kenya. A study by Preuss (2013) notes that procurement reforms in Kenya have led to enactment of Public Procurement and Disposal Act 2015, the Public Procurement and Disposal Regulations 2016.

According to Miles (2020) ethics, awareness and training influence the compliances of procurement regulations in organizations. The study recommends that it is important to offer ethics education to school tendering committee members in order to ensure they serve in ultimate objectivity, accountability, and non- discrimination. The manual provides procurement guidelines on KESSP related expenditure. The manuals make reference to other Ministry of Education publications that set out in a more comprehensive manner the processes to be observed in the procurement of particular

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items such as instructional materials and school infrastructure. The study reveals that only less that 20% of public colleges undertake their procurement practices in tandem with the Secondary Schools and Colleges Procurement Manual guidelines.

2.1.3 Employee Competencies

According to Srivastava (2013), competence refers to the specified skills, knowledge, attitudes and behavior necessary to achieve a task, activity or career. Organizations may sometimes distinguish between competencies and competences with the former indicating the desired personal attributes and behaviors while the latter referring to the knowledge and skill required to bring about improved performance. Within the context of the technical competencies, they are divided into practical competence, foundational competence, reflexive competence and applied competence. The practical competence refers the demonstrated ability to perform a set of tasks while the foundational competencies show the demonstrated ability of what and why to carry out tasks. The reflexive competence explains the ability to integrate actions with an understanding of action while applied competence shows a demonstrated ability to perform a set of tasks with understanding and reflexivity (Basal, 2017).

According to Arrowsmith (2014) many procuring organizations have staffs that do not have the right competence needed for good procurement management. Most of the personnel carrying out procurement functions in the local authorities in Kenya have not been sensitized on procurement regulations. The Public Procurement law requires that each procuring entity establishes a procurement unit with procurement professionals. The lack of professionalism has been explained as a cause of non-compliance to procurement laws. Professionalism in public procurement relates to the levels of education and qualifications of the workforce as well as the professional approach to the conduct of business. When the procurement workforce is not adequately educated in procurement there are serious consequences such as breaches of codes of conduct. The level of professionalism with corruption, which has been shown to impede compliance to public procurement regulations.

In the public sector, procurement officers are the agents of the principal (the state) to realize the goals and objectives of the state. Therefore, the goals of the agent must be in conformity with that of the principal (the state) in order to achieve efficient reform in the public procurement programs. Top management support is critical to the success of either a successfully green procurement strategy. Berman (2020) found that priorities among the top/middle management are important drivers in the environmental purchase. Without high level support employees are often unwilling or unable to pursue GPP initiatives. Further, lack of trained staff to implement GPP programs has also been identified as a barrier to GPP initiatives.

A study by Burt (2018) suggests that effective execution of organization procurement procedures greatly depends on the level of employees' training since lack of professional trained staff on procurement functions limits the ability of the organizations to embrace procurement best practices through benchmarking. Lack of professional training is a key impediment to maintenance of high level of professionalism in the execution of procurement procedures in many public sector organizations. New training ideas are developed because trends are towards making training more practical, realistic and pertaining to employees′ jobs. Training must give employees broader knowledge to enable them to effectively use new technology and integrate it into the workplace.

Lower costs, better quality, faster return on investment, increased productivity and long-term growth are all achieved once employees adapt to changes and are trained accordingly. In the past, training was very classroom/instructor-oriented, this has recently proved ineffective compared to modern developments. More recent trends show training going beyond "job specific" to "continuous learning", in which the focus is on other areas of expertise within the company. In continuous learning, employees are encouraged to learn and understand the jobs and skills needed of those around them and more often perform them on a regular basis. Semi-autonomous work teams are most conducive in the continuous learning environment because each employee trains others in their group. This way, employees know one another′s jobs and can perform them in case of an employee absence. Employees begin to realize that learning and continuous training is as big as job itself (Clemens, 2016).

A study by Bowen (2017) contends that lack of professional training on procurement functions and lack of continuous training on implementation of best procurement performance hinders the procurement staff in public sector organizations to effectively execute procurement procedures. Training one another, or "train the trainer", is another important aspect of continuous learning. It allows employees to develop new applications and techniques and share them with their peers or supervisors. The efficiency and the effectiveness of procurement procedures are hindered by absence of effective continuous employees training programs that help in equipping the employees with competitive procurement management skills.

According to Bogdan (2015), competency is the cluster of skills and attitude that, affects a major part one's job; that correlates with performance on the job that can be measure against well-accepted standard; and that can be improved through training and development. Through the competence levels, the researcher identifies the employee's knowledge level, skills in handling the green procurement tools and systems, information management and resource allocation in

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green procurement. The number of experiences in years of an employee in a green procurement environment and any additional training levels are also used to evaluate their contribution to performance.

2.1.4 Financial Performance

Financial performance refers to the act of performing financial activity. In broader sense, financial performance refers to the degree to which financial objectives being or has been accomplished. Company performance is very essential to management as it is an outcome, which has been achieved by an individual, or a group of individuals in an organization related to its authority and responsibility in achieving the goal legally, not against the law, and conforming to the morale and ethic. Performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage (Zhu, 2016).

A study by Marron (2013) financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is used as a general measure of firm's overall financial health over a given period, and can be used to compare similar firms across the industry or to compare industries or sectors in aggregation. There are many different ways to measure financial performance but all measures should be taken into aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales. Furthermore, the analyst or investors may wish to look deeper into financial statements and seek out margin growth rate or any declining debt.

Financial performance is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. The financial performance analysis identifies the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the balance sheet and profit and loss account (Jayaraman, 2013).

The role of financial aspects attached to GGP, particularly perceptions of the financial viability of implementing GPP play crucial role in shaping the degree to which SP policies are acted upon since green procurement/socially responsible production methods are often perceived of as being inherently more expensive than other methods. Given the tight budget constraints and countervailing objectives faced by most public sector organizations, perceptions regarding the cost-effectiveness of GPP do play a particularly important role in decision making (Brian, 2016).

A study by Jennings (2015) indicated increased cost of green procurement products compared to those not environmentally friendly as a major barrier to adoption. Marron (2013) says that often green procurement products simply cost more than conventional products where there is little regard to either the environmental or social implications of the production process in addition to cost for employee training or extended time engagement with suppliers.

A study by Bowen (2017) studied the adoption of specific purchasing environmental policies along the supply chain – on firm's financial performance and the influence of tourists' green procurement purchasing behavior – measured in terms of long-term orientation, green procurement perceived risk and cost-green procurement quality inference – on this relationship. Past literature has scarcely considered the role of tourists' green procurement purchasing behaviors as key factors that influence the performance implications of the adoption of environmental practices. Our sample focuses on the tourism industry and includes data on 122 firms over a seven-year period creating an unbalanced panel with 479 observations. We apply random-effects generalized least squares regressions to test the proposed relationships. We do not find a positive relationship between green procurement and financial performance. We find that the positive relationship only holds when the moderating effects of tourists' green procurement purchasing behavior are added. By using panel data, this research contributes to the literature on green procurement tourism because it offers an insight on the nature of the relationship between environmental practices and financial performance over a long period of time. Moreover, it highlights under which conditions tourists enable firms to accrue financial benefits from the adoption of environmental practices.

A study by Berman (2020) defined performance as the effective orientation of an employee in regard to his or her work. Additionally, Akerele (2013) considered organizational performance to constitute an individual's overall perception and evaluation of the work environment, and it may also be viewed as a positive emotional status that develops from an individual's job appraisal and job experiences. The overriding concept that links these definitions is that employee performance is a result of employee satisfaction, which captures how individuals in an organizational environment feel regarding their overall work. Various studies have emphasized personal characteristics and environmental factors as critical variables influencing employee satisfaction and performance.

Various studies conducted in Asian economies, including that of the UAE. From these studies, we deduce that organizations seeking to improve financial performance must address employee satisfaction, which in turn helps to stimulate better financial performance, thus improving overall organizational performance. Conversely, dissatisfied employees are more likely to experience negative effects on their mental health status and financial performance, thus leading to a decline in financial performance (Brent, 2015).

There is a general understanding among researchers that performance is an important variable in work organization and has become a significant indicators in measuring

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organizational performance in many studies. Employee performance can also be measured through the combination of expected behavior and task-related aspects even though performance is often determined by financial figures. In reality, performance that is based on an absolute value or relative judgment may reflect overall financial performance.

2.1.5 Operational Cost

Operational cost are expenses associated with the maintenance and administration of a business on day to day basis. Redundant stock, scrap or waste is a cost to an organization and the most effective way is to reduce it is to avoid the production of waste. When stores are perishable, keeping them run risks of misuse, using shelf space unduly and not signaling requirements for what may be lifesaving products (Berman, 2020).

The costs involved in the green procurement may include: valuation of stores, assets or equipment; consultancy costs for preparation of a disposal proposal; disposal proceedings management and supervision costs in the case that a disposal agent may be hired; or costs relating to facilities, services or resources to be provided by the procuring entity, such as office space or communication facilities for consultants or counterpart staff, access to the stores, assets and equipment in the case of pre-bid site visits and conferences and the procuring entity should ensure that adequate funds are budgeted and allocated prior to initiating the disposal proceedings, taking into account all costs involved in the disposal. The procuring entity should ensure that adequate funds are available for managing the disposal proceedings including funds required for publication of notices. Keeping costs down is justified by the need to maintain transaction costs to an acceptable level to avoid bidders applying cost loaders that affect the financial returns of the project which in case of a disposal would mean that the Treasury receives less money for the stores and assets (Amtzen, 2015).

As suggested by Jennings (2015), asserts that cost is the value of money that has been used up to produce something, and hence is not available for use anymore. In business, cost is one of acquisition, in which case the amount of money expended to acquire it is counted as cost. In this case, money is the input that is gone in order to acquire the thing. This acquisition cost may be the sum of the cost of production as incurred by the original producer, and further costs of transaction as incurred by the acquirer over and above the price paid to the producer. Usually, the price also includes a mark-up for profit over the cost of production.

Improved information on the costs of green procurement practices activities may assist the managers to make better decisions. For example, more realistic inventory holding cost than an industry average or other estimate may prevent over-optimistic off shoring decisions, not to mention information of all the costs involved in sourcing. Opening up the "black box" of the administrative costs of logistics could contribute to the esteem of supply chain management within the organization: although the labor and wage costs of the logistics costs cover the largest part of administrative costs, a more detailed itemization of to which all activities those resources are spend might evoke interest in the re-design of activities in order to streamline the processes by removing redundancies and unnecessary tasks or replacing the tasks in the supply chain (Marron, 2013).

Costs hinders the negotiation and cooperation between supply chain partners. The members may have different understanding of the definition or the content of some cost categories and may be unable to demonstrate the cost of performing certain activities or how the partner's behavior affects the whole supply chain's costs. Green procurement literature related to logistics costing and cost controlling since 1980's has concentrated predominantly on suitability and use of individual management accounting techniques such as activity-based costing, target costing, total cost of ownership or balanced scorecard in a supply chain management context, or discusses performance measurement in general, with strong emphasis on non-financial performance measurement (Basal, 2017).

A study by Bansal (2020) management accounting literature, on the other hand, publishes research of the organization of costing in companies and the factors that affect the cost and control systems in organizations, but the context of logistics and supply chain management is seldom represented. The level of analysis in the empirical research is often at the company or business unit level, but that may be too broad a level of aggregation to directly describe the cost controlling of logistics and supply chain management. One can logically deduce that similar mechanisms may apply to organizing of costing in supply chain management as well, but the empirical evidence is virtually inexistent.

The principle in green procurement practices and consequently also in supply chain cost management is to identify overlapping and redundant tasks and activities that do not bring value to the end customer and to perform them in a most efficient location of the supply chain, simplify or automate them, or to eliminate completely, if possible. This would create unique processes of indeterminate durance that are hard to imitate by the competitors, that is the supply chain management and cost management 'resources' of the organization would bring competitive advantage. However, an opposing view is that cost management systems would not be unique sources of competitive advantage, as the management accounting innovations and managerial trends are diffused by consultants, industry lobbying organizations, and professional education and professionals moving from one organization to another. Thus similar systems would appear in several companies, and be ubiquitous within an industry (Brent, 2015).

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The definition of logistics costs in a firm is based on how the logistics activities and outputs are defined. A factor complicating the definition of logistics output is the shared use of resources such as personnel or buildings with other company functions. Defining the logistics outputs is necessary for building cost standards for ongoing costing, and might require some simplification in order not to make costing system unnecessary complicated. For large scale decisions which are made only occasionally, more specific analyses are needed in addition. Setting standards for logistics activities has been considered more difficult than for manufacturing because – depending on the production process – more activities may exist than in production, and output measures vary more than in production (Bowen, 2017).

A study by Carlson (2014) identified well over twenty different cost elements from publications, but closer examination reveals that some of them are overlapping. However, transportation and inventory carrying cost are found in all of the reviewed publications, and all but one also include warehousing costs. A typical perspective in supply chain management literature is to classify the logistics costs by activities or supply chain functions (procurement or warehousing). From accounting perspective this way is less common, and management accounting text books more often present costs by cost types.

According to Miles (2020), however, only one of the 30 companies interviewed measured these cost components; others measured part of them. The most common cost that is understood as logistics cost is probably transportation, along with the inventory and inventory-keeping related costs: these are mentioned already 1930 as part of operation costs. In a survey from the end of 1970's, 87% of the 300 North American respondents reported having transportation cost information readily available, and in mid-1980's it was estimated that together transportation and warehousing represent about 80% of overall distribution cost in most companies.

More specifically, in the reviewed literature in transportation cost are included inbound and outbound transportation and pilferage or damage during transportation. Preuss (2013) recommend that trucking cost plus local delivery cost to be treated as total transportation cost. Salant (2014) discusses the recording of transportation costs in a great detail, and differentiates between company internal (transport from one warehouse to another) and external transportation; transportation with own fleet and third party transport services; and regular and as-needed transport. It depends by the company, what kind of transport cost classification is required; also a closer examination by transport mode may be needed.

2.2 Critical Literature Review

A study by Jayaraman (2013) states that 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. Whereas this is true the author has not shown how technological advancement affects adoption of green procurement practices in energy sector in Kenya, and therefore the study was conducted to fill in the gaps left by the previous researchers.

As suggested by Berman (2020) the procurement policies employed by many public training institutions in UK determine the level of effectiveness in execution of the procurement practices. The study also notes that the level of procurement regulations compliance, level of top management support and the employed procurement procedures determine the nature of the employed procurement policies in many training institutions. Whereas this is true the author has not shown how procurement policies affects adoption of green procurement practices in energy sector in Kenya, and therefore the study was conducted to fill in the gaps left by the previous researchers.

According to Arrowsmith (2014) many procuring organizations have staffs that do not have the right competence needed for good procurement management. Most of the personnel carrying out procurement functions in the local authorities in Kenya have not been sensitized on procurement regulations. The Public Procurement law requires that each procuring entity establishes a procurement unit with procurement professionals. Whereas this is true the author has not shown how employee competencies affects adoption of green procurement practices in energy sector in Kenya, and therefore the study was conducted to fill in the gaps left by the previous researchers.

Financial performance is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. The financial performance analysis identifies the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the balance sheet and profit and loss account (Jayaraman, 2013). Whereas this is true the author has not shown how financial performance affects adoption of green procurement practices in energy sector in Kenya, and therefore the study was conducted to fill in the gaps left by the previous researchers.

As suggested by Jennings (2015), asserts that cost is the value of money that has been used up to produce something, and hence is not available for use anymore. In business, cost is one of acquisition, in which case the amount of money expended to acquire it is counted as cost. In this case, money is the input that is gone in order to acquire the thing. This acquisition cost may be the sum of the cost of production as incurred by the original producer, and further costs of

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transaction as incurred by the acquirer over and above the price paid to the producer. Usually, the price also includes a mark-up for profit over the cost of production. Whereas this is true the author has not shown how operational costs affects adoption of green procurement practices in energy sector in Kenya, and therefore the study was conducted to fill in the gaps left by the previous researchers.

2.3 Summary

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.

Procurement policy benefits the organization by keeping costs in line and clearly defining how purchases will be made. As the needs of the entity change, there is a good chance that the procurement policy will be adjusted to meet those new circumstances. This is necessary to make sure the policy continues to function in the best interests of the company or non-profit organization and keep the acquisition process simple and orderly.

Many procuring organizations have staffs that do not have the right competence needed for good procurement management. Most of the personnel carrying out procurement functions in the local authorities in Kenya have not been sensitized on procurement regulations. The Public Procurement law requires that each procuring entity establishes a procurement unit with procurement professionals. The lack of professionalism has been explained as a cause of non-compliance to procurement laws.

Financial performance is a metric that is used to assess a company's overall financial health over time. It may also be used to compare similar companies within the same industry or to compare industries or sectors in aggregate. By appropriately creating linkages between the elements of the balance sheet and profit and loss account, the financial performance analysis identifies the firm's financial strengths and shortcomings.

Improved information on the costs of logistics and supply chain management activities may assist the managers to make better decisions. For example, more realistic inventory holding cost than an industry average or other estimate may prevent over-optimistic off shoring decisions, not to mention information of all the costs involved in green procurement practices.

2.4 Conceptual Framework

Conceptual framework is a diagram that shows how independent variables are related to the dependent variable.

See annex Figure 2. 1 Conceptual Framework

2.4.1 Technological Advancement

Technological advancement determines the green procurement strategies the organization can adopt. Technological innovation plays an important role in reducing the costs of both types of environmental protection, and thus promoting green procurement growth. 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.

2.4.2 Procurement Policies

Procurement policies was indicated to affect implementation on green procurement. The degree to which green procurement is implemented in organizations concerns organizational attitudes and incentives for green procurement practices. Other issues includes the extent to which there is support for green procurement practices at senior levels in an organization and the degree to which organizational processes and structures support, or retard, the development of green procurement. Green procurement is set within the context of achieving value for money. It requires the integration of environmental performance considerations into the procurement process including planning, acquisition, use and disposal. The supporting administrative processes and procurement methods can also offer opportunities to reduce the environmental impacts of government operations.

2.4.3 Employee Competencies

Employees competencies has an impact on green procurement implementation. The number of experience in years of an employee in a green procurement environment and any additional training levels are also used to evaluate their contribution to performance. Efficiency and the effectiveness of procurement procedures are hindered by absence of effective continuous employees training programmes that help in equipping the employees with competitive procurement management skills.

2.4.4 Financial Performance

Financial performance is key in adoption of green procurement practices in energy sector in Kenya. Finances were indicated to affect implementation on green procurement. Given the tight budget constraints and countervailing objectives faced by most public sector organizations, perceptions regarding the cost-effectiveness of GPP do play a particularly important role in decision making. Increased cost of green procurement products compared to those not environmentally friendly as a major barrier to adoption.

2.4.5 Operational Costs

Operational costs are key in adoption of green procurement practices in energy sector in Kenya. Operational cost are expenses associated with the maintenance and administration of a business on day to day basis. Redundant stock, scrap or

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waste is a cost to an organization and the most effective way is to reduce it is to avoid the production of waste. When stores are perishable, keeping them run risks of misuse, using shelf space unduly and not signaling requirements for what may be lifesaving products.

2.4.6 Green Procurement Practices

Green procurement is a spending and investment process typically associated with public policy, although it is equally applicable to the private sector. Organizations practicing green procurement meet their needs for goods, services, utilities and works not on a private cost-benefit analysis, but with a view to maximizing net benefits for themselves and the wider world. In doing so they must incorporate extrinsic cost considerations into decisions alongside the conventional procurement criteria of price and quality, although in practice the green procurement impacts of a potential supplier's approach are often assessed as a form of quality consideration. These considerations are typically divided thus: environmental, economic and social.

3. Methodology

3.1 Research Design

Research design is the scheme, outline or plan that is used to generate answers to research problems. This research problem was studied through the use of descriptive research design. According to Kothari (2014), descriptive survey research design is a type of research used to obtain data that can help determine specific characteristics of a group. A descriptive survey involves asking questions (often in the form of a questionnaire) of a large group of individuals either by mail, by telephone or in person. The main advantage of descriptive survey research is that it has the potential to provide us with a lot of information obtained from quite a large sample of individuals.

3.2 Target Population

Target population as described by Mugenda and Mugenda (2019), is a universal set of study of all members of real or hypothetical set of people, events or objects to which an investigator wishes to generalize the result. The target population of this study was 300 employees, Kenya Pipeline Company. Mugenda and Mugenda (2019) explained that the target population should have observable characteristics to which the study intents to generalize the result of the study. This definition assumes that the population is not homogeneous.

See annex Table 3. 1 Target Population

3.3 Sampling Design

According to Kothari (2014), sampling is the process by which a relatively small number of individuals, objects or events is selected and analyzed in order to find out something about the entire population from which is selected. A sample is a small proportion of target population selected using some systematic form. The researcher used stratified random sampling method because it enables generalization of a larger population with a margin of error that is statistically determinable. A sample size of 75 respondents was selected representing 25% of the target population. The sample size was as shown in table 3.2: - According to Kothari (2014), a sample size of 25% of the target population is appropriate for research.

See annex Table 3. 2 Sample Size

3.4 Data Collection Procedures and Instruments Used

The researcher used questionnaires to collect data from the respondents because they were convenient, less time consuming and less costly. They included both open and closed questions. The questionnaires were distributed and picked later. This method is easier because all the answers are written and later submitted to the researcher in good time for analysis. Questionnaires were used in the study since they were presented in paper format. There was no opportunity for interviewer's bias. The questionnaires were drafted in such a way that they were simple and understand in order to encourage high respondent rate. Anonymity of respondent's was assured so as to encourage respondents (Kombo and Tromp 2019).

3.4.1 Validity and Reliability of Research Instruments

Validity and reliability of the data collected was vital to ensure good quality research. Reliability has to do with the quality of measurement. In its everyday sense, reliability is the consistency or repeatability of your measures. Validity concerns that whether the concept really measures the aimed concept. Pre-testing of the instrument enabled the researcher to access clarity of the instrument and its ease of use. Mugenda and Mugenda (2019) suggests that pre-testing allowed the errors to be discovered as well as acting as a tool for employee competence a research team before the actual collection of the data begins.

3.4.2 Administration of Questionnaires

Questionnaires were used in the study; they were hand-delivery and they were collected after two days. The types of questions used were both open and closed ended. Closed ended questions were used to ensure that the given answers are relevant. The researcher phrased the questions clearly in order to make clear dimensions along which respondents were analyzed. In open ended questions, space was provided for relevant explanation by the respondents, thus giving them freedom to express their feelings. This method was effective to the study in that; it created confidentiality and the presence of the researcher was not required as the questionnaire was self-explanatory (Kombo and Tromp 2019).

3.5 Data Analysis Methods

This is the process of gathering, modeling and transforming raw data with the goal of highlighting useful information, suggesting, conclusion and supporting decision making (Kothari, 2014). The purpose of data analysis is to prepare crude data into interpretable design. The data was analyzed using quantitative and qualitative techniques. On qualitative

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technique data was analyzed through explanatory notes while, in quantitative techniques the researcher used tables, pie-charts and bar graphs.

4.Data analysis

4.1 Presentation of the Findings

4.1.1 Response Rate

Table 4.1 and figure 4.1 represents the response rate. The respondents who returned were 70 who made up 93% of the total sample population targeted and non-response stood at 5 which made up to 7% who never responded. The response rate of 93% was considered significant enough to provide a basis for reliable conclusions. It was inferred that there was good response rate.

See annex Table 4. 1 Response Rate

4.1.2 Gender Analysis

See annex Table 4. 2 Gender Analysis

Table 4.2 and figure 4.2 shows gender of the respondents. 54% of the respondents were male while 46% were female. This implies that gender representation was evenly propositional and the views under the study were representative of both genders, however male respondents were marginally more than their female colleagues. According to Kothari (2014) respondent's gender is one of the most important characteristics in understanding their views about subjects.

4.1.3 Age Analysis

See annex Table 4. 3 Age Analysis

Table 4.3 and figure 4.3 shows the age of respondents who participated in the study. From the analysis, 4% were between 21 years of age, 40% were between 21-30 years of age, 28% were between 31-40 years of age, 19% were between 41-50 years of age and 9% were respondents above 51 years. From the analysis the majority of the respondents were between 21-30 years of age. The response represents a good dispersion of the respondents in the age bracket. According to Kombo and Tromp (2019), respondent's age is significant characteristics in understanding one's view about particular issues.

4.1.4 Highest Level of Education

See annex Table 4. 4 Highest Level of Education

Table 4.4 and figure 4.4 indicate the level of education analysis. According to the analysis 6% of the total respondents had certificate, 37% had diploma, 46% had undergraduate degree and 11% of the respondents had postgraduate degree. It was concluded that the majority of the respondents in the organization had undergraduate degree. This implies that respondents' highest education level was adequate to answer and interpret the research questions. This shows that work at the organizations requires professional input. According to Kothari (2014), response of an individual is likely to be determined by his or her educational level and therefore it becomes imperative to know the educational background of the respondents.

4.1.5 Level of Management

See annex Table 4. 5 Level of Management

According to table 4.5 and figure 4.5 shown, it indicates that 1% of the respondents were from top level management, 1% of the respondents were from middle level management and 98% were from support staff. From the findings, it was established that majority of respondents were support staff. This shows that all levels of the organization were adequately represented in the study. According to Zikmund (2017), respondents' position in an organization enables the respondents to be better position to understand its dynamics and answer research questions with authority.

4.1.6 Work Experience

See annex Table 4. 6 Work Experience

Table 4.6 and figure 4.6, indicate the response that was got on the work experience. In this regard the respondents who worked in the organization for less than 2 years were 11%, the response of those between 2-5 years were 29%, the response of those between 6-9 years were 41%, and finally the response of those who have worked in the organization for above 9 years were 19%. These results indicated that majority of the employees had worked in the organization for between 6-9 years. According to Zikmund (2017), respondents who have worked in an organization for long are in a better position to understand its dynamics and answer research questions with authority.

4.1.7 Technological Advancement

See annex Table 4. 7 Whether technological advancement affect adoption of green procurement practices in energy sector in Kenya

According to table 4.7 and figure 4.7, 87% of respondents said technological advancement had an effect on adoption of green procurement practices in energy sector in Kenya, while 13% said technological advancement had no effect on adoption of green procurement practices in energy sector in Kenya. Based on the findings majority of the respondents were of the opinion that technological advancement is a factor to be considered on adoption of green procurement practices in energy sector in Kenya.

4.1.8 Technological Advancement

See annex Table 4. 8 Rating of technological advancement on adoption of green procurement practices in energy sector in Kenya

Table 4.8 and figure 4.8 indicates the rating of technological advancement on adoption of green procurement practices in energy sector in Kenya. From the analysis majority of the respondents at 43% rated technological advancement effect to be very great extent, 20% indicated great extent, 19% indicated moderate extent, 5% indicated low extent while 13%

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indicated had no effect. Based on the analysis it was concluded that technological advancement affect adoption of green procurement practices in energy sector in Kenya at a very great extent.

4.1.9 Procurement Policies

See annex Table 4. 9 Whether procurement policies affect adoption of green procurement practices in energy sector in Kenya

From table 4.9 and figure 4.9, 84% of respondents said that procurement policies had an effect on adoption of green procurement practices in energy sector in Kenya, while 16% said procurement policies had no effect on adoption of green procurement practices in energy sector in Kenya. Based on the findings majority of the respondents were of the opinion that procurement policies are a factor to be considered on adoption of green procurement practices in energy sector in Kenya.

4.1.10 Procurement Policies

See annex Table 4. 10 Rating of procurement policies on adoption of green procurement practices in energy sector in Kenya

Table 4.10 and figure 4.10 indicates the rating of procurement policies on adoption of green procurement practices in energy sector in Kenya. From the analysis majority of the respondents at 46% rated procurement policies effect to be very great extent, 20% indicated great extent, 11% indicated moderate extent, 7% indicated low extent while 16% indicated has no effect. Based on the analysis it can be concluded that procurement policies affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

4.1.11 Employee Competencies

See annex Table 4. 11 Whether employee competencies affect adoption of green procurement practices in energy sector in Kenya

According to table 4.11 and figure 4.11, 89% of respondents said employee competencies had an effect on adoption of green procurement practices in energy sector in Kenya, while 11% said employee competencies had no effect on adoption of green procurement practices in energy sector in Kenya. Based on the analysis it can be concluded that employee competencies affect adoption of green procurement practices in energy sector in Kenya.

4.1.12 Employee Competencies

See annex Table 4. 12 Rating of employee competencies on adoption of green procurement practices in energy sector in Kenya

Table 4.12 and figure 4.12 indicates the rating of employee competencies on adoption of green procurement practices in energy sector in Kenya. From the analysis majority of the respondents at 43% rated employee competencies effect to be very great extent, 20% indicated great extent, 17% indicated moderate extent, 9% indicated low extent while 11% indicated has no effect. Based on the analysis it can be concluded that employee competencies affect adoption of green procurement practices in energy sector in Kenya at a very great extent.

4.1.13 Financial Performance

See annex Table 4. 13 Whether financial performance affect adoption of green procurement practices in energy sector in Kenya

According to table 4.13 and figure 4.13, 83% of respondents said financial performance had an effect on adoption of green procurement practices in energy sector in Kenya, while 17% said financial performance had no effect on adoption of green procurement practices in energy sector in Kenya. Based on the analysis it can be concluded that financial performance affects adoption of green procurement practices in energy sector in Kenya.

4.1.14 Financial Performance

See annex Table 4. 14 Rating of financial performance on adoption of green procurement practices in energy sector in Kenya

Table 4.14 and figure 4.14 indicates the rating of financial performance on adoption of green procurement practices in energy sector in Kenya. From the analysis majority of the respondents at 23% rated financial performance effect to be very great extent, 21% indicated great extent, 20% indicated moderate extent, 19% indicated low extent while 17% indicated has no effect. Based on the analysis it can be concluded that financial performance affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

4.1.15 Operational Costs

See annex Table 4. 15 Whether operational costs affect adoption of green procurement practices in energy sector in Kenya

According to table 4.15 and figure 4.15, 94% of respondents said operational costs had an effect on adoption of green procurement practices in energy sector in Kenya, while 6% said operational costs had no effect on adoption of green procurement practices in energy sector in Kenya. Based on the analysis it can be concluded that operational costs affect adoption of green procurement practices in energy sector in Kenya.

4.1.16 Operational Costs

See annex Table 4. 16 Rating of operational costs on adoption of green procurement practices in energy sector in Kenya

Table 4.16 and figure 4.16 indicates the rating of operational costs on adoption of green procurement practices in energy sector in Kenya. From the analysis majority of the respondents at 33% rated operational costs effect to be very great extent, 23% indicated great extent, 20% indicated moderate extent, 18% indicated low extent while 6% indicated has no effect. Based on the analysis it can be concluded that operational costs affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

4.2 Summary of Data Analysis

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4.2.1 General Information

Under this section, general information comprises of the summary made on various description about the respondents. Beginning with the response rate, 75 questionnaires were administered to the respondents. From the total number of questionnaires distributed, 70 questionnaires were responded to comprising of 93%; however, 5 questionnaires were not responded to and this was equivalent to 7%. The response was considered satisfactory for the purpose of analysis.

From the results above it is identified that most of the respondents were male which constituted 54% and female at 46%. From the analysis, 4% were between 21 years of age, 40% were between 21-30 years of age, 28% were between 31-40 years of age, 19% were between 41-50 years of age and 9% were respondents above 51 years. From the analysis the majority of the respondents were between 21-30 years of age. The response represents a good dispersion of the respondents in the age bracket. It was also disclosed that 6% of the total respondents had certificate, 37% had diploma, 46% had undergraduate degree and 11% of the respondents had postgraduate degree. It was concluded that the majority of the respondents in the organization had undergraduate degree. It was disclosed that 1% of the respondents were from top level management, 1% of the respondents were from middle level management and 98% were from support staff. From the findings, it was established that majority of respondents were support staff. It was concluded that the majority of the respondents in the organization were graduates. Lastly on work experience 11% of the respondents had worked in the organization for less than 2 years, 29% of the respondents had a working experience between 2-5 years, 41% had work experience of 6-9 years while, 19% had work experience of above 9 years.

4.2.2 Technological Advancement

Majority of the respondents representing 87% agreed that technological advancement affect adoption of green procurement practices in energy sector in Kenya, while the remaining 13% said technological advancement has no effect on adoption of green procurement practices in energy sector in Kenya.

4.2.3 Procurement Policies

Majority of the respondents representing 84% agreed that procurement policies affect adoption of green procurement practices in energy sector in Kenya, while the remaining 16% said procurement policies has no effect on adoption of green procurement practices in energy sector in Kenya.

4.2.4 Employee Competencies

Majority of the respondents representing 89% agreed that employee competencies affects adoption of green procurement practices in energy sector in Kenya, while the remaining 11% said employee competencies has no effect on adoption of green procurement practices in energy sector in Kenya.

4.2.5 Financial Performance

Majority of the respondents representing 83% agreed that financial performance affect adoption of green procurement practices in energy sector in Kenya, while the remaining 17% said financial performance has no effect on adoption of green procurement practices in energy sector in Kenya.

4.2.6 Operational Costs

Majority of the respondents representing 94% agreed that operational costs affect adoption of green procurement practices in energy sector in Kenya, while the remaining 6% said operational costs has no effect on adoption of green procurement practices in energy sector in Kenya.

5.Summary of findings,conclusions and recommendations

5.1 Summary of Findings

5.1.1 How does technological advancement affect adoption of green procurement practices in energy sector in Kenya?

Majority of the respondents indicated that technological advancement is one of the most important factors which affect adoption of green procurement practices in energy sector in Kenya. The response was rated as; very great extent at 43%, great extent at 20%, moderate extent at 19%, low extent at 5% and 13% said it has no effect. Based on the findings the study reveals that technological advancement affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

5.1.2 To what extent does procurement policies affect adoption of green procurement practices in energy sector in Kenya?

Majority of the respondents indicated that procurement policies is one of the most important factors which affect adoption of green procurement practices in energy sector in Kenya. The response was rated as; very great extent at 46%, great extent at 20%, moderate extent at 11%, low extent at 7% and 16% said it has no effect. Based on the findings the study reveals that procurement policies affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

5.1.3 How does employee competencies affect adoption of green procurement practices in energy sector in Kenya?

Majority of the respondents indicated that employee competencies is one of the most important factors which affect adoption of green procurement practices in energy sector in Kenya. The response was rated as; very great extent at 23%, great extent at 20%, moderate extent at 17%, low extent at 9% and 11% said it has no effect. Based on the findings the study reveals that employee competencies affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

5.1.4 To what extent does financial performance affect adoption of green procurement practices in energy sector in Kenya?

Majority of the respondents indicated that financial performance is one of the most important factors which affect

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adoption of green procurement practices in energy sector in Kenya. The response was rated as; very great extent at 23%, great extent at 21%, moderate extent at 20%, low extent at 19% and 17% said it has no effect. Based on the findings the study reveals that financial performance affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

5.1.5 How does operational costs affect adoption of green procurement practices in energy sector in Kenya?

Majority of the respondents indicated that operational costs is one of the most important factors which affect adoption of green procurement practices in energy sector in Kenya. The response was rated as; very great extent at 33%, great extent at 23%, moderate extent at 20%, low extent at 18% and 6% said it has no effect. Based on the findings the study reveals that operational costs affects adoption of green procurement practices in energy sector in Kenya at a very great extent.

5.2 Conclusions

Majority of the respondents indicated that technological advancement affects adoption of green procurement practices in energy sector in Kenya. Based on the findings, the study came to a conclusion that technological advancement is key on adoption of green procurement practices in energy sector in Kenya.

Majority of the respondents indicated that procurement policies affect adoption of green procurement practices in energy sector in Kenya. Based on the findings, the study came to a conclusion that procurement policies are key in adoption of green procurement practices in energy sector in Kenya.

Majority of the respondents indicated that employee competencies affect adoption of green procurement practices in energy sector in Kenya. Based on the findings, the study came to a conclusion that employee competencies are key in adoption of green procurement practices in energy sector in Kenya.

Majority of the respondents indicated that financial performance affects adoption of green procurement practices in energy sector in Kenya. Based on the findings, the study came to a conclusion that financial performance is key in adoption of green procurement practices in energy sector in Kenya.

Majority of the respondents indicated that operational cost affects adoption of green procurement practices in energy sector in Kenya. Based on the findings, the study came to a conclusion that operational cost is key in adoption of green procurement practices in energy sector in Kenya.

5.3 Recommendations

5.3.1 Technological Advancement

The study recommends the management should have their systems automated. They should embrace technology for the purpose of enhancing efficiency, effectiveness and transparency. They should also adopt e-procurement and uses electronic systems to manage internal operations. The study further recommends that the management should partner with ICT firms to ensure that they have reliable and effective procurement systems that can provide timely information about what needs to be procurement, from which suppliers and at what time.

5.3.2 Procurement Policies

The study recommends the management to review legislations to ensure compliance with the international procurement systems requirement. In light of this, the study recommends that the current legislation be reviewed to eliminate the loopholes hindering procurement efficiency. It is also recommended that the bodies entrusted with public procurement regulatory function should endeavor to ensure strict adherence to the public procurement and Disposal Act (2005) and its regulations (2006). The study further recommends that there is need to enormously implement procurement policies which encourage adoption of green procurement practices in organizations in order to enhance performance.

5.3.3 Employee Competencies

The study recommends that the management should employ professional trained procurement staff and continuously train the staff on emerging issues on public procurement practices. Further the study recommends that the management should put up appropriate training programs to keep its employees updated with the current job requirements. Hence the researcher recommends that training should be geared to all employees regardless of their gender and job category. This will not only make the employees motivated but also they acquire relevant skills, knowledge and attitude towards the company.

5.3.4 Financial Performance

The study recommends that the management provide a good working environment for employees so as to enhance their efficiency and performance. The management should show a high level of commitment to employee objectives, while the employees will also show a high level of commitment to the organization. The management should provide rewards and recognitions for the best performing employees to motivate them.

5.3.5 Operational Costs

The study recommends that the management should make use of automation so as to reduce their operational costs. The number of staff needed to operate an automated inventory management system will be lower than that of a manual system, there will be fewer errors committed by the staff, and fewer lost sales (reduced opportunity costs) as well as effective and cheaper communication with the suppliers and the customers. Further the management should emphasize on e-procurement interventions in order to minimize costs and enhance efficiency and effectiveness in service delivery.

5.4 Suggestion for Further Study

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The study suggests that further research to be done on factors affecting adoption of green procurement practices in public sector in Kenya since this study focused on private sector in order to depict reliable information that illustrates real situation in both public and private sector organizations. Further study should also be carried out using other variables for instance professional ethics, leadership style, and top management support to widen the scope of the study.

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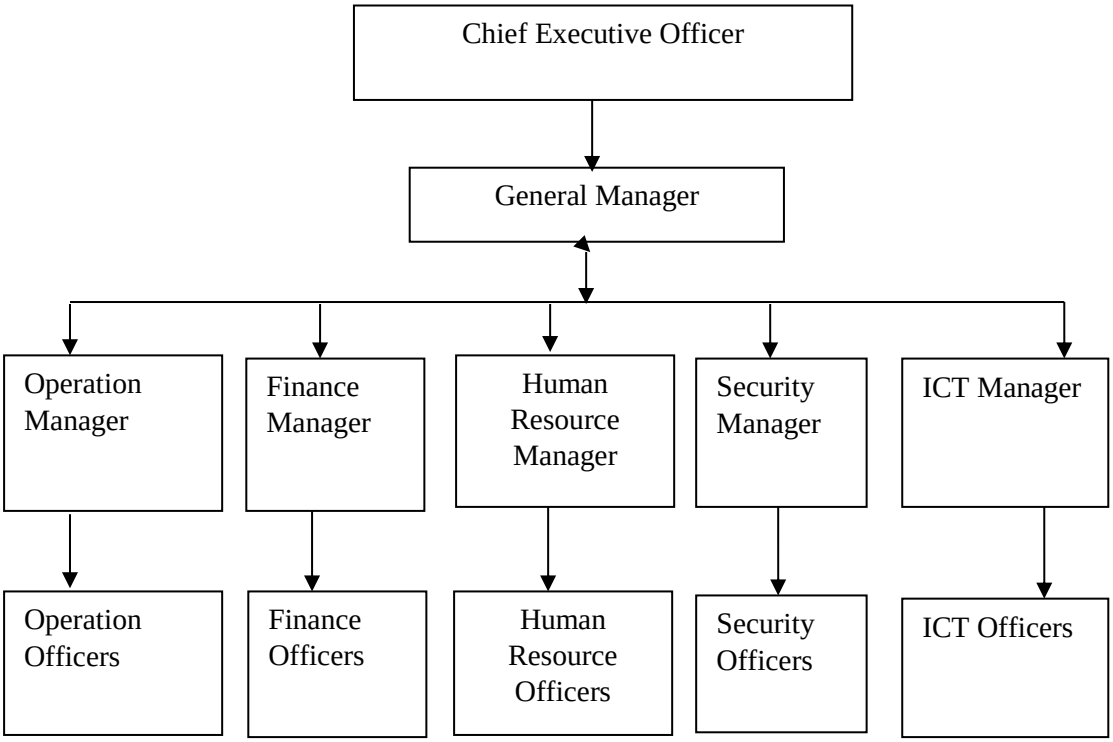
Annex

Figure 1. 1 Organization Structure of Kenya Pipeline Company



Source: Kenya Pipeline Company (2022)

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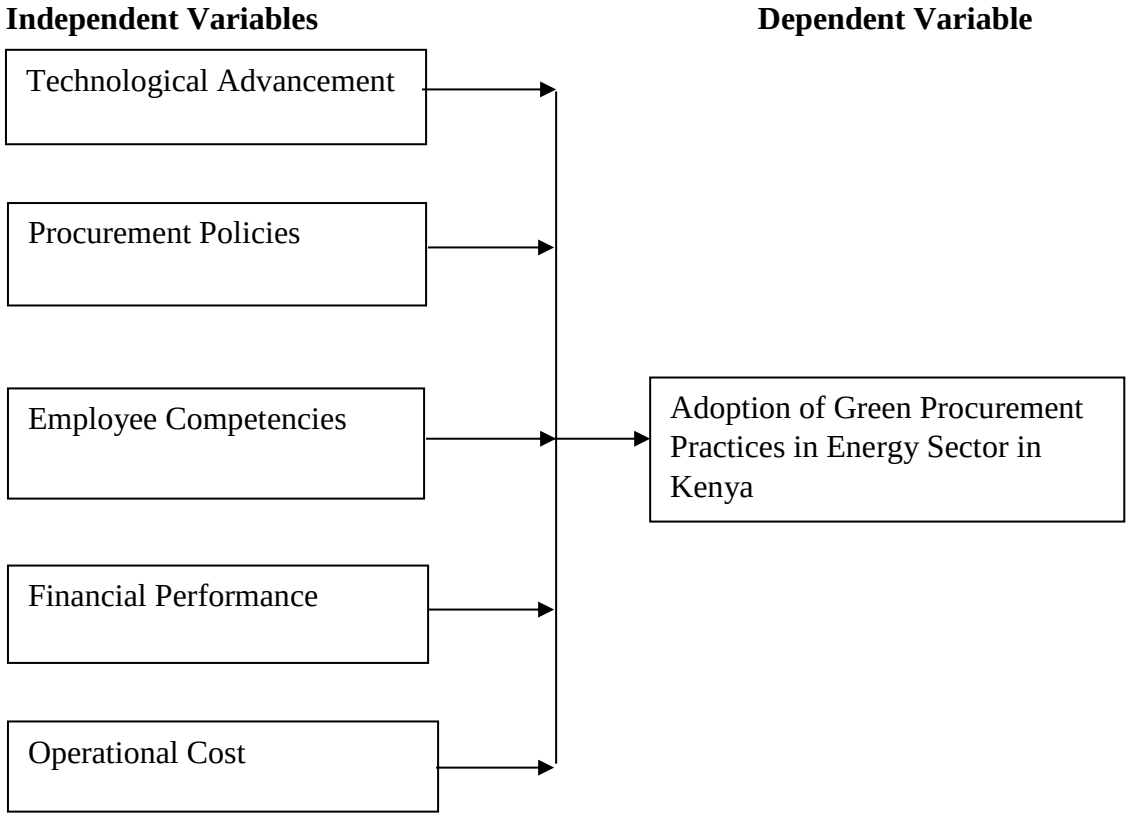
Figure 2. 1 Conceptual Framework



Source: Author (2022)

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Table 3. 1 Target Population

Category	Frequency	Percentage (%)
Top Level Management	2	1
Middle Level Management	5	2
Support Staff	293	97
Total	**300**	**100**

Source: Kenya Pipeline Company (2022)

Table 3. 2 Sample Size

Category	Target Population	Sample size	Percentage (%)
Top Level of Management	2	1	1
Middle Level Management	5	1	2
Support Staff	293	73	97
Total	**300**	**75**	**100**

Source: Author (2022)

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Table 4. 1 Response Rate

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Category	Frequency	Percentage (%)
Response	70	93
Non-response	5	7
Total	**75**	**100**

Source: Author (2022)

Table 4. 2 Gender Analysis

Category	Frequency	Percentage (%)
Male	38	54
Female	22	46
Total	**70**	**100**

Source: Author (2022)

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Table 4. 3 Age Analysis

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Category	Frequency	Percentage (%)
Below 21 years	3	4
21-30 years	28	40
31-40 years	20	28
41-50 years	13	19
Above 51 years	6	9
Total	**70**	**100**

Source: Author (2022)

Table 4. 4 Highest Level of Education

Category	Frequency	Percentage (%)
Certificate	4	6
Diploma	26	37
Undergraduate Degree	32	46
Postgraduate Degree	8	11
Total	**70**	**100**

Source: Author (2022)

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Table 4. 5 Level of Management

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Category	**Frequency**	**Percentage (%)**
Top Level Management	1	1
Middle Level Management	1	1
Support Staff	68	98
Total	**70**	**100**

Source: Author (2022)

Table 4. 6 Work Experience

Category	**Frequency**	**Percentage (%)**
Less than 2 years	8	11
2-5 years	20	29
6-9 years	29	41
Above 9 years	13	19
Total	**70**	**100**

Source: Author (2022)

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Table 4. 7 Whether technological advancement affect adoption of green procurement practices in energy sector in Kenya

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Category	Frequency	Percentage (%)
Yes	61	87
No	9	13
Total	**70**	**100**

Source: Author (2022)

Table 4. 8 Rating of technological advancement on adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Very Great Extent	30	43
Great Extent	14	20
Moderate Extent	13	19
Low Extent	4	5
No Effect	9	13
Total	**70**	**100**

Source: Author (2022)

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Table 4. 9 Whether procurement policies affect adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Yes	59	84

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No	11	16
Total	**70**	**100**

Source: Author (2022)

Table 4. 10 Rating of procurement policies on adoption of green procurement practices in energy sector in Kenya

Category	**Frequency**	**Percentage (%)**
Very Great Extent	32	46
Great Extent	14	20
Moderate Extent	8	11
Low Extent	5	7
No Effect	11	16
Total	**70**	**100**

Source Author (2022)

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Table 4. 11 Whether employee competencies affect adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Yes	62	89
No	8	11

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Total	**70**	**100**

Source: Author (2022)

Table 4. 12 Rating of employee competencies on adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Very Great Extent	30	43
Great Extent	14	20
Moderate Extent	12	17
Low Extent	6	9
No Effect	8	11
Total	**70**	**100**

Source: Author (2022)

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Table 4. 13 Whether financial performance affect adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Yes	58	83
No	12	17
Total	**70**	**100**

Source: Author (2022)

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Table 4. 14 Rating of financial performance on adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Very Great Extent	16	23
Great Extent	15	21
Moderate Extent	14	20
Low Extent	13	19
No Effect	12	17
Total	**70**	**100**

Source Author (2022)

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Table 4. 15 Whether operational costs affect adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Yes	66	94
No	4	6
Total	**70**	**100**

Source: Author (2022)

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Table 4. 16 Rating of operational costs on adoption of green procurement practices in energy sector in Kenya

Category	Frequency	Percentage (%)
Very Great Extent	23	33
Great Extent	16	23
Moderate Extent	14	20
Low Extent	13	18
No Effect	4	6
Total	**70**	**100**

Source Author (2022)

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