EFFECT OF GREEN PROCUREMENT PRACTICES ON PERFORMANCE OF MANUFACTURING FIRMS IN KISUMU COUNTY, KENYA

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DECLARATION

Declaration by Candidate.

I declare that this is my own research and has never been presented in any University or Institution for diploma or degree awards.

Maureen Anyango Oyugi

Signature……. Date……

B151/4072/2018

Approval by the School Supervisors

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DEDICATION

This research is devoted to my spouse, Philip Ochieng' and my children: Joyce Meyer, Kezziey Myra and Master Joseph Hans who had to bear with my absence during my studies. Their moral support encouraged me to finish the studies successfully.

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ABSTRACT

Green procurement refers to the purchase of services and products that have a lesser effect on the environment throughout its life cycle more than average equity. The Kenya Association of Manufacturers reiterates that the decline in productivity is disrupting business and reflects total competition and jeopardizes the government's 20% growth ambitions for Kenya to succeed. As experts point out the possible correlation between green procurement and general organizational performance, there is a need to establish the effects of green procurement processes in practice on the performance. The research sought to investigate the effect of green procurement practices on the performance of manufacturing firms in Kisumu County, Kenya. The objectives of the study are; to assess the effect of green purchases on the performance of manufacturing factories in Kisumu County, Kenya; to determine the effect of green suppliers collaboration on the performance of manufacturing factories in Kisumu County, Kenya; to assess the effect of green distribution on the performance of manufacturing factories in Kisumu County, Kenya. The hypothesis were: there is no significant effect of green purchases on the performance of manufacturing firms in Kisumu County, Kenya; there is no significant effect of green suppliers collaboration on the performance of manufacturing firms in Kisumu County, Kenya. and there is no significant effect of green distribution on the performance of manufacturing firms in Kisumu County, Kenya. The research is important for the manufacturing industry, the general public, and future researchers. The research was anchored on resource-based theory, systems theory, and logistics management theory. A cross-sectional survey design was employed by the research. The study population were 141 employees of the procurement, finance, manufacturing and transport departments in all six manufacturing firms in Kisumu County, Kenya. Yamane formula was applied in sampling 104 respondents. The study adopted stratified and simple random sampling to select 104 respondents from all six manufacturing industries. The structured questionnaire and interview guide were used as data collection tools. Descriptive and inferential statistics were used to analyze data. The study found that green purchases had effect on the performance of manufacturing firms in Kisumu County, Kenya (mean = 4.5; std. deviation = 0.807); The collaboration of green suppliers had effect on the performance of manufacturing firms in Kisumu (mean = 4.44; std. deviation = 0.962) and green distribution had effect on the performance of manufacturing firms in Kisumu County, Kenya (mean = 4.46; std. dev. = .959) ; and green procurement processes have had a significant effect on the operations of the manufacturing firms in Kisumu County, Kenya (mean = 4.33; std. dev. =. 981). The regression results displayed a strong relationship between green procurement practices and the performance of manufacturing firms in Kisumu County, Kenya (R = .835; p value <.05). Squared R indicated that green procurement practices contributed to a 69.8% variation in the performance of the manufacturing firms in Kisumu. The research concluded that: green procurement had effect on the performance of manufacturing firms in Kisumu County, Kenya; The collaboration of green suppliers had effect on the performance of the manufacturing firms in Kisumu County, Kenya; and the green distribution had effect on the performance of the manufacturing firms in Kisumu County, Kenya. The results revealed that green procurement practices played key role in the overall performance of the manufacturing firms in Kisumu County, Kenya. The study recommended that managers of manufacturing firms in Kisumu County, Kenya should employ adequate green purchasing strategy in order to boost performance. In addition, the study recommended that, there is a need to increase the collaboration of green providers. In order to increase quality performance, the study recommended that managers of manufacturing enterprises in Kisumu employ the suitable green distribution strategy.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

CIPS: Chartered Institute of Procurement & Supply

EABL: East Africa Breweries Limited

GoK: Government of Kenya

GSCM: Green Supply Chain Management

KAM: Kenya Association of Manufacturers.

NRBV: Natural Resourced Based View

OPERATIONAL DEFINITION OF TERMS

Firm: A business entity, such as an organization, a company with a fixed debt or partnership, who sells goods or services to be performed

Green Distribution: Green distribution includes green packaging, green transport, reduced inventory levels and storage areas.

Green Procurement: The buying of service and products that have a lesser environmental effect in their entire life cycle over normal.

Green Purchasing: Environment purchases that include participation in actions such as recycling of goods at time of purchase.

Green supplier Collaboration: Production processes that use inputs that have a less impact on the environment and produce less or no waste.

Manufacturing: Production of goods used or sold using personnel and equipment, tools, chemical and biological processes, or construction.

Organization: An organized group of people with a specific purpose, especially business, community and organization.

Performance: Includes actual output or organizational results measured by target results (objectives and goals)

Supply chain: A set of activities that improve mobility, information, and financial resources.

CHAPTER ONE

1.0 INTRODUCTION TO THE STUDY

1.1 Background of the Study

Green procurement, according to Coddington (2013), is the purchase of products or services that have a lesser environmental impact throughout their life cycle than traditional equity. It entails incorporating environmental considerations into purchase decisions that are based on price, performance, and quality. Increased waste management costs, employee safety and public health concerns, and the creation of harmful and chronic environmental problems locally and globally are just a few of the drivers driving local communities to improve their businesses' environmental features (Maignan, Hillebrand & McAlister, 2012). The notion of pollution avoidance underpins green procurement, which aims to remove or reduce dangers to human health and the environment (Bolton, 2010). It entails assessing purchases based on a number of factors, ranging from the initial purchase requirement through the available possibilities to the ultimate disposal.

Kisumu is the third largest city in Kenya and it is situated along the Lake Victoria. It covers an area of 417 square kilometer. Over 500,000 people are living in Kisumu City (Kisumu Regional Government, 2013). Agong and Otom (2015) estimated the waste generation in Kisumu to be between 200 and 450 tons of waste. Twenty percent is collected and transported to the dumping site in Kachok, a dumping ground near the City Stadium. In addition, the population of Kisumu City is expected to grow by 2.8 percent annually. (Munala and Moirongo, 2011). Citizens are exposed to associated health risks. One of the long-term solutions to this is 'raw' therefore the study focused on the effects of green procurement practices on performance of manufacturing firms.

The implications of institutional pressure measurement on the dynamics and functioning of growing green supply chains were studied by Zhu and Sarkis (2007). This study, which included 341 Chinese manufacturers, looked at the relationship between raw material supply control systems, environmental, and economic performance using three measuring instruments: market regulation, competitive institutional pressures, and found that there is increasing environmental pressure to implement green supply chain management processes. Market and government

pressures through regulations contributed to improved environmental performance. The findings show that Chinese manufacturers are increasingly under pressure to develop green supply sales management practices due to rising environmental pressures. Organizations are influenced to enhance environmental performance by market (normal) and regulatory (compulsory) forces, especially when these pressures lead to the adoption of eco-design and green buying practices. The study, however, recommended that different research be conducted from different manufacturing firms but that there be more data and theoretical relevance. This study assessed the control factor's measurement that affect utilizing three hypotheses: system theory, natural resource-based theory, and logistics management theory.

Khaksar and Abbasnejad (2015) examined the impact of green supply chain management strategies on environmental performance and competitive advantage in the cement sector. The study's goal is to look into the link between green suppliers, innovation, environmental performance, and competitive advantage in Iran's cement sector. The study demonstrated a favorable and significant association between the raw material supplier, green establishment, and the organization's environmental performance, using a sample of all managers and specialists in the cement business. They also discovered that there is a significant positive association between innovation and environmental performance, as well as environmental performance and competitive advantage. The study failed to include the measurement feature and recommended that a separate study be included that included the measurement feature, so this study came up with control elements as a measure to determine the impact of green procurement practices on manufacturing firm performance

Nunes & Bennett (2010) conducted research on the European automotive industry. Investigate the green applications in the automotive industry listed in the environmental report of selected companies. They discovered that automakers are increasingly pursuing green applications, such as raw materials, eco-design, raw production, and recycling. They also discovered that putting these systems in place increased the firm's environmental and performance slightly. Rather than comparing the three car firms, the study concluded by emphasizing major programs produced by each. Natural processes are being used by the world's major automobile manufacturers from the creation of their manufacturing plants through the conclusion of their products' lives. Both production and non-production sites are eligible for the green building certificate. Selected sectors have taken use of "green energy" to lessen their reliance on oil by using waste gas, wind,

and solar energy to power their crops. Carbon dioxide emissions were also addressed by replacing clean fossil fuels instead of coal. The study recommended further research in various fields of production such as power generation, chemicals, timber and furniture and food processing firms with comparable results.

According to a study conducted in India by Mitra and Datta (2013) on the adoption of green supply chain management practices and their influence on performance: a study to test Indian manufacturing firms, the status of green supply chain management practices adoption by Indian enterprises was still in existence. Consumer awareness of environmental sustainability was minimal during its early stages, and the regulatory structure was likewise not focused on supporting it. They also discovered that suppliers' environmental collaboration had a favorable impact on the manufacturing of environmentally friendly products and consumption, which is linked to the factory's competitiveness and economic performance. They came to the conclusion that environmental supplier cooperation has a good impact on the development of environmentally friendly products and design, which is also linked to the company's competitiveness and financial success. Other similar research should be conducted in both developed and developing countries, according to the report.

Kim and Rhee (2012) did extensive research on the impact of essential elements on the performance of balance points in Korean green chain management companies. They pointed out that during the 1990s, the Korean economy has been characterized by fast industrial development and economic transition, which has resulted in major environmental challenges. The Korean government has been working on ways to develop clean production technology in order to address these concerns. Green supply chain management appears to be a key strategy for Korean companies to improve their performance. They discovered that planning and implementation were the most important elements in the pre-study study, followed by partners' cooperation and infrastructure integration; however, the implementation of the support had a negative impact on financial performance, increasing costs and responsibilities. They also discovered that it has a substantial impact on green supply chain management deployment. Because only state-owned firms were researched and assessed in this survey, the survey results may not accurately reflect GSCM's overall characteristics. The study emphasized the importance of continuing to learn more businesses in the future.

In a study done in Hungary, Monika and Gabriel (2015) discovered that all organizations required product inspection reports and product credits from suppliers, as well as design data. Obtaining supplier certification or environmental management systems, installing environmentally friendly implants, establishing natural purchasing standards, and requesting product content labeling from suppliers are all popular strategies. Three out of four businesses employed this method. Environmental provider education, professional and financial support for suppliers, and environmental inspection of a second-class supplier are less widely utilized ways that one or two first-time organizations are planning or implementing. The study did not use quantitative variables in the study.

In Africa, pressure has been put on companies to run their businesses responsibly, Welford (1998), emphasizes that most businesses that respond to environmental issues do so only in less important ways. With increasing awareness of the problems of environmental sustainability, manufacturing companies these days are beginning to think and act raw. Many organizations have organizational difficulties in measuring performance from measuring the environmental performance of an organization combined with increasing pressures to develop additional environmental and social responsibilities, building new communication strategies in line with efforts to incorporate sustainability into strategic performance measurement programs. The goal of continuous supply chain performance monitoring is to address the environmental, social, and economic aspects of supply chain management.

Kibwereza (2016) did a study on the outcomes of the acquisition of green public land in Tanzania; specifically, the instance of Morogoro Municipal Council. The survey discovered that workers and upper management are still unaware of the importance of green public procurement. The inquiry also discovered that the council does not purchase raw materials. More should be done in terms of staff training and procedures to inform employees of the potential benefits of purchasing natural resources, according to the report. Because the study did not use quantitative variability in its design, it was necessary to add a control factor as a measurement component in this investigation.

In recent years, Kenyans' social and political worries about the environment have grown. The Kenya Association of Manufacturers reiterates that the decline in productivity is disrupting business and reflects total competition and jeopardizes the government's 20% growth ambitions

for Kenya to succeed. The growth in the value of raw materials procurement processes is mainly driven by increasing environmental degradation such as depletion of resources, overcrowding of waste and increasing levels of pollution. As a result, it was necessary to determine the effects of green procurement methods on manufacturing firm operations and to propose policy recommendations that could aid in reversing the recently identified bad performance in the manufacturing sector. Raw materials, including raw packaging, procurement, raw materials, raw materials, raw materials, waste management, and green production, are the subject of the study.

Nderitu and Ngugi (2014) investigated the impact of green procurement practrices on manufacturing company performance. East Africa Breweries Limited Company conducted research. Staff capacity in green procurement ideas, ICT infrastructure, supplier selection, and engagement in green buying in practice were the variables under investigation. According to research, the performance of manufacturing industries is influenced by a number of factors. EABL as an organization with a system that allows supplier participation has contributed significantly to the green purchase of up to 29% of the organisation's performance. The study also discovered that all unit changes in suppliers' involvement in the green purchase, as well as a rise in unit cost overruns in the green purchase, resulted in an increase in the organization's performance of 0.901 and 0.409, respectively, and were therefore directly associated. A second study should be undertaken to look at some of the variables in raw material procurement to see how they affect performance, according to the report. The study therefore demanded additional flexibility tests such as raw purchases and green distribution against the performance of manufacturing companies.

Korir (2014) conducted research in Nairobi, Kenya, on how to manage the green supply chain and the operations of automotive companies. The study discovered that green procurement techniques are beneficial to the automotive industry. Purchasing raw materials, ensuring suppliers meet their environmental objectives, and evaluating suppliers for specific environmental procedures are all part of the firm's green procurement strategies. According to research, using paperless means to order things is less popular. According to the report, research should be conducted at various levels of a company, which is why this research is being conducted in production plants.

Salma (2014) conducted a study on the effect of green operations practices on the financial performance of commercial banks in Kenya. The study sought to determine the adoption of green operations practices and their impact on the financial performance of commercial banks in Kenya. It went after Kenya's 44 commercial banks. Banks used a variety of green operating practices, including environmental rules and policies, green borrowing, green processes and procedures, and green products and services, according to the report. It also determined that banks had obstacles in adopting green operating procedures due to poorly defined objectives, insufficient infrastructure to support these programs, limited staff training and certification, and mandatory and inefficient systems for checking or failing green processes. Finally, the study discovered a non-significant positive association between raw practices adoption and financial performance. The study, on the other hand, concentrated on determining the financial performance of a few institutions, which left a gap that the study attempted to fill by looking at the non-financial performance of selected manufacturing industries.

Ouma & Wanyoike (2016) conducted a study in Kisumu on management support, such as decision management of green logistics at Kisumu's Motor Vehicle Industries, concluding that management support has a significant impact on green logistics, implying that the automotive industry's management should play a key role in ensuring that raw material implementation is completely executed in order to maintain our environment for long-term sustainability. Furthermore, managerial support was discovered to be a key component in the usage of raw resources in the study. Other adjustments, on the other hand, have failed to cooperate with research in evaluating their influence on performance. As a result, the study intended to determine the effects of green purchases, green supplier selection, and raw material distribution as extra flexibility in the use of raw material procurement processes. The study also sought to fill a gap in the use of flexible control features that were not included in the study.

Kenya's national climate change program also highlights the necessity for green logistics implementation management to be controlled (GoK, 2005). The national long-term approach to low carbon resilience makes it easier to reflect on and incorporate climate change elements into the country's long-term development plans and finances, as seen in the app's lower eight parts. Kenya's Public Procurement and Disposal Act also appears to support laws and practices that reduce environmental damage by promoting Green Procurement and Reverse logistics. (GoK, 2013).

It is important that the manufacturing companies adopt green procurement because of its environmental benefits, purchase decisions affect the local environment and the health of our citizens and employees and the international community. Contributing to the impact of Human Health, Green Procurement promotes the production of products using a few toxic ingredients. The impact on human health and the environment is diminishing. Greenhouse gas emissions are reduced, and the impact of those goods during the manufacturing process (e.g. water / air pollution) is altered, as well as the harm caused by spills and inappropriate disposal. When the product is used, we also limit the risk to product handling workers and the possible risk to residents. Green procurement helps to improve energy efficiency, which decreases energy consumption and, as a result, reduces sulfur dioxide (which causes acid rain) and carbon dioxide emissions (the main greenhouse gas).

Green procurement faces challenges despite its many benefits, and even high environmental awareness and pressures in factories, this awareness did not translate into the adoption of green buying processes, let alone the expected development in other workplaces. Public skepticism about the adoption of raw materials has led to a lack of accessible access to a reliable environment, health information and safety products and chemicals. (Tan, 2002)

1.2. Statement of the Problem

Green procurement is becoming more popular in many industries throughout the world, including manufacturing, and scholars are discovering a link between raw material procurement and organizational performance. Green procurement has become a mainstay in firms that want to maintain the environment and boost production where there is growing competition, according to Qinghua, Sarkis, and Lai (2007).

Green procurement methods in the public sector: an issue for all commercial enterprises in Kenya (Khisa, 2011). Further, Kenya Association of Manufacturers reiterates that there is a decline in productivity disrupting business and reflects total competition and jeopardizes the government's 20% growth ambitions for Kenya to succeed. Environmental degradation, such as resource depletion, trash overcrowding, and rising pollution levels, are driving the development in the value of green procurement techniques. Green procurement standards have remained low in the public sector in Kenya, with most processes receiving a 3 or 4 rating. His research found

that the most significant barrier to green procurement adoption is a lack of knowledge about the concept, followed by the acquisition of raw materials, and finally financial resources. They propose a separate study that employs a variety of data collection methods, including interviews.

However, a study conducted in Kenya by Kimira, Getuno, and Kiarie (2016) discovered a robust link between green procurement and company performance. According to Malaba, Ogolla, and Mburu (2014), there is a poor link between green procurement and organizational performance. The objective of the study was to determine the effect of green procurement practices on the firm performance of manufacturing firms in Kisumu County, Kenya.

1.3 Objective of the study

The study objectives are outlined in this section.

1.3.1 General Objective

The general objective of this research was to determine the effect of green procurement practices on performance of manufacturing firms in Kisumu County, Kenya.

1.3.2 Specific Objectives

The following are the specific objectives of the study:

i. Assessing the effect of green purchases on the performance of manufacturing firms in Kisumu County, Kenya.
ii. To establish the effect of the of green suppliers' collaboration on the performance of manufacturing firms in Kisumu County, Kenya.
iii. To assess the impact of green distribution on the performance of manufacturing firms in Kisumu County, Kenya.

1.4 Research Hypothesis

H_{O1}: There is no significant effect of green purchases on the performance of manufacturing firms in Kisumu County, Kenya.

H_{O2}: There is no significant effect of green suppliers' collaboration on the performance of manufacturing firms in Kisumu County, Kenya.

H_{O3}: There is no significant effect of green distribution on the performance of manufacturing firms in Kisumu County, Kenya.

1.5 Justification of the study

Research into the effect of green procurement practices on the performance of manufacturing firms in Kisumu County, Kenya, is justified due to its potential to reduce the environmental footprint of manufacturing activities, providing valuable insights into regional sustainability efforts. Further, given the increasing stringency of global environmental regulations, examining how manufacturing firms in Kisumu County adhere to green procurement practices is crucial. This study can offer essential information for both companies and regulatory bodies. Also, the study's rationale lies in investigating the economic implications of implementing green procurement practices for companies in Kisumu County. This exploration can shed light on the economic benefits or challenges associated with adopting such practices, influencing local business strategies.

Moreover, companies embracing green procurement practices may gain a competitive edge. Analyzing the relationship between these practices and performance in Kisumu County can provide insights into how firms position themselves in the market. In addition, green procurement practices often align with corporate social responsibility (CSR) initiatives. Understanding how these practices contribute to a firm's CSR in Kisumu County is valuable for both companies and the local community. Also, the study can illuminate how stakeholders, including customers, suppliers, and investors, perceive and respond to environmentally sustainable business practices in the manufacturing sector in Kisumu County.

Further, the findings from the study can inform policymakers in Kisumu County about the effectiveness of existing green procurement policies and the potential need for additional regulations or incentives to encourage sustainable practices in the manufacturing sector. Finally, in addressing the scarcity of research specifically focused on the relationship between green procurement practices and the performance of manufacturing firms in Kisumu County contributes to academic literature and provides practical insights for businesses and policymakers.

1.6 Significance of the study

The findings of this study will help business leaders design and develop green procurement policies that will benefit their firms in the future while also giving them a competitive edge based on environmental sustainability.

Also, the findings of the study will assist the general public in their choice of green supplies and their products as they are becoming more aware of environmental issues and global warming.

Further, scholars of supply chain will find the study useful as reference material for expanding their knowledge in the procurement process and also be used a reference point for researchers and scholars doing similar studies in relation to this research topic.

1.7 Limitation of the study

The study was conducted using a closed-ended questionnaire which limited the options available to respondents. This limitation was addressed by pre-testing the questionnaire for validity and reliability, as well as ensuring that the Likert item contains the appropriate possibilities for each topic. Questionnaires are notorious for having a low response rate. To counteract the utilization of the drop-and-pick method, individualized introduction letters were sent out to increase response rates. Because of the skepticism that comes with many research projects, some respondents were hesitant to provide information. This was remedied by guaranteeing respondents of complete confidentiality and disclosing the study's academic objective and intent. The study was focused on six manufacturing firms, limiting the generalizability of the findings. As a result, the conclusions of this study will only be directly applicable to the manufacturing firms in Kisumu County, Kenya under investigation. These flaws, however, did not detract the study's credibility.

1.8 Scope of the study

The study looked at the green procurement practices as distinct types (green purchases, green supplier collaboration, and green distributions). As dependent variants, firms performance (on-time delivery of products and services, efficiency of goods and services, and quality of goods and services). The study was limited to manufacturing firms situated in Kisumu, Kenya. The study focused on 4 departments including procurement department, finance department, production department and transport department from the six firms. The study was conducted in 2019.

1.9 Assumptions of the study

The following assumptions were made in the study as follows:

1. The study assumed that manufacturing firms in Kisumu County can be considered relatively homogenous in terms of their size, structure, and operational characteristics, except for variations related to green procurement practices.
2. The research assumed that the data collected, including information on green procurement practices and firm performance, was accurate and reliable. This assumed that respondents provided truthful and unbiased information.
3. The study assumed a causal relationship between green procurement practices and the performance of manufacturing firms. It presupposes that changes in green procurement practices directly influence and contribute to changes in firm performance.
4. The research assumed that external factors, such as economic conditions, regulatory changes, and market dynamics, do not significantly confound the relationship between green procurement practices and firm performance.
5. The study assumed that the findings from manufacturing firms in Kisumu County can be generalized to other similar contexts within Kenya or potentially in other regions with similar characteristics.
6. The research assumed that green procurement practices within manufacturing firms remained relatively stable over the study period and are not subject to drastic changes or fluctuations.
7. The study assumed that manufacturing firms in Kisumu County have the necessary resources, including financial, technological, and human resources, to adopt and implement green procurement practices effectively.
8. The research assumed that manufacturing firms in the study area are aware of the concept of green procurement practices and have a sufficient understanding of their potential impact on firm performance.
9. The study assumed that the adoption of green procurement practices by manufacturing firms is voluntary and not primarily driven by external pressures or regulatory requirements.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter reviews theoretical and empirical literature related to the study based on the following thematic areas: green purchasing, green supplier collaboration and green distribution effect on performance of manufacturing firms in Kisumu County, Kenya.

2.2 Theoretical review

The study was anchored on the three theories: system theory, natural resource-based view theory and logistics management theory

2.2.1 Systems Theory

The study is based on the theory of systems. A system, according to Mele, Pels, and Polese (2010), is a collection of elements connected together by a given form of normal interaction or dependence. A system having strong input and output is called an organization. Furthermore, organizations are termed functioning programs if they can survive in a given environment as a result of continual dynamic processes and a few sorts of internal adjustments. However, throughout the planning phase, the decision maker must analyze the structure of his system and take the required steps to ensure survival. The systemic approach to systems in the economic context, according to Carayannis, Campbell, and Scheherazade (2016), refers to the relationship of supply and demand.

System theory focuses on the interactions and relationships that generate a better knowledge of activities and results between elements of organizations. Smaller systems are needed to help coordinate the transformation process when organizations acquire inputs and convert them into products that are exported to the environment. Organizational structure, according to Lozano and Valles (2013), is defined as a stable pattern of relationships between organizational components, most notably patterns in relationships and functions. These themes include consolidation (job organization), segregation (job division), the establishment of high relationships (executive systems), and the organization's official rules, processes, and regulatory controls (management systems) (Maignan, 2012).

This theory supports the initial variation of this study in that the decision maker in the system should aim to make purchasing decisions that will improve the implementation of green procurement processes.

2.2.2 Natural Resource Based View Theory

NRBV-based visual aids, which are based on Hart's Natural Resource Based View Theory (Hart & Dowell, 2011), provide a mechanism to link natural acts to performance. According to NRBV, in order for businesses to obtain a competitive edge, they must invest their natural resources in programs targeted at pollution avoidance, product management, and sustainable growth. Assets, skills, organizational processes, and information are examples of these resources. While other theories, such as institutional theory, explain why firms make green purchases, NRBV demonstrates how environmental efforts might help firms achieve a competitive edge.

This theory also highlights that the environment can be a stressful component in a long-term competitive setting, and it argues that companies who have a stronger environmental link than others may have a competitive edge (Hart,1995).

Because the firm must manage its assets so that they do not have a detrimental impact on the environment, which is the source of all natural resources, provider testing / partnership as a study variable is closely tied to this notion. Molamohamadi (2013), established that the high value providers involved play a role in stabilizing natural resources and reducing industrial pollution.

2.2.3. Logistics Management Theory

Morris and Imrie(2012), were the pioneers of logistics management theory. According to this theory, planning entails arranging, organizing, and managing all operations in the flow of products, from raw materials to final use, as well as reversing the flow of the product created, in order to meet the needs of the customer and other interested parties. Better customer service, reduced costs, lower bond costs, and less environmental impact are all goals (Christopher, 2012). This function's dependability is determined by how well the system's architecture allows for this type of movement. Performance management is a subset of procurement management that organizes, operates, and manages the efficient, effective, and timely supply of goods, services, and information linked to their origin and use in order to meet customer needs. Inbound and outbound transport management, ship management, inventory management, logistics management, order fulfillment, transport network design, inventory management, supply chain

planning or demand, and outsourced service providers are all examples of asset management functions. Acquisition and purchase, manufacturing planning and planning, packing and packaging, and customer support are all examples of logistics activity at various levels. It is involved at all levels of strategy, operations, and strategy development and implementation (Alex, 2013). Asset Management is a completely integrated function that integrates and conducts all transportation functions, as well as combining transportation operations with other areas such as marketing, marketing, manufacturing, finance, and information technology (Morris & Imrie, 2012). Flexible green distribution has been supported by logistics management theory.

2.3. Empirical Review.

2.3.1 Green purchasing and performance

Kamonya (2013) researched the impact of Green Procurement Practices on small and medium enterprises. Green procurement practices are focused on the principle of pollution prevention, which strives to eliminate and/or reduce risks to human health and the environment, according to the researcher, who used a descriptive research design to determine the impact of green procurement processes on Nairobi Small and Medium Enterprises. This entails assessing purchases using a number of factors, ranging from the necessity to buy a thing in the first place to the alternatives for discarding it at the end. Consumers, investors, shareholders, and regulatory agencies in Small and Medium Businesses are increasingly demanding that businesses act responsibly toward the environment. As a result, implementing green procurement methods indicates the organization's commitment to considering and minimizing the environmental repercussions of its actions, resulting in decisions that are both environmentally and economically sound. Government rules and regulations, changing customer wants and expectations, company efforts, global purchasing and production standards, employee efforts, and supplier effect are all factors influencing the adoption of raw materials by SMEs, according to the report. This study however, was limited to only small and medium enterprises and never addressed issues faced by manufacturing firms. It cannot be assumed that the findings would be the same in manufacturing firms hence the need for this study.

A study on green procurement practices in the public sector: a case study of all Kenyan parastatals was undertaken by Khisa (2011). The study conducted a survey of all state-owned companies in Kenya with a list of questions that were directed at procurement managers. Using a

sample size of 63 (50% of the population). Green procurement management systems were found to be low in the Kenyan government sector, with most processes receiving a rating of 3 or 4. There were eight criteria that respondents believed to be major drivers of raw material purchases, as indicated by their score points. The results of the descriptive analysis suggested that the main problem was the absence of sufficient information regarding the idea of green procurement. Environmental rules are the most typical driver of green procurement, according to the survey, while shareholder pressure is the least likely reason. According to the findings, the most significant barrier to green procurement adoption is a lack of knowledge about the idea of raw material acquisition, while the least significant barrier is a lack of financial resources. With global warming and environmental concerns from all sectors, the report suggests that a Kenyan government agency implement green buying procedures to help with conservation efforts. However, because this study does not perform qualitative research or use a range of fundamental data collection methods like interviews and questionnaires, it leaves a research gap that this study aims to fill.

2.3.2 Green supplier collaboration and performance.

Vanalle and Santos (2011) conducted research on environmental needs in the Brazilian automotive industry: a case study for manufacturers of first-class car parts. Using a sample research design and quality data collected through discussion use. The study discovered that exemplary research has shown how a company in the automotive industry expands its environmentally friendly practices by providing a sustainable adoption process to its customers. Having an ISO 14001 certification is not enough because additional steps to improve environmental processes to prevent pollution and ongoing monitoring are required. According to the case study, a corporation needs the help of its suppliers to improve its environmental performance, especially when it seeks mitigation, recycling, and redesign from its vendors. Environmental performance may be enhanced by implementing strict environmental requirements for supplier selection, along with constant monitoring of supplier environmental performance, and requires continual improvement, according to research. Vanalle (2011) presented a number of approaches to increase environmental performance through supplier testing, however the study did not examine the impact of other green options on total company performance. As a result, this research aims to close the gap by examining other green processes as well as organizational effectiveness.

Kimira, Getuno & Karie (2014) have researched the impact of green procurement processes on competitive manufacturing companies in Kenya: Unilever Kenya Limited is a case in point. The study's goal was to see how supplier selection, product content, and Unilever Kenya Limited's competitive procurement procedure affected the company's bottom line. The study used a descriptive research design, using 60 Unilever executives as the target audience. Primary data was collected using a questionnaire. The study found that selecting suppliers had a significant impact on the company's competitiveness. The study concluded that Unilever Kenya has adopted green procurement practices among which the selection of green suppliers or adopters of green purchases. Organizations should make an extra effort to develop suppliers into strategic supply chain partners, according to experts. However, it did not consider the impact of the intervention variance on performance to be measured by current research.

2.3.3 Green distribution and performance

In the South African Council (2010), on the use of green logistics. A study was conducted that answered questions about how transport authorities perceive the transport of green logistics in South Africa and how often transport companies use green logistics. The study used a qualitative approach to informal discussions to understand management perceptions and ideas about the use of green logistics. As a result, there was a lot of agreement among management in South Africa on green logistics. Environmental planning is widely used among South Africa's major transport corporations in the context of conservation operations, according to the report. The study focused on fuel efficiency and route efficiency, with a focus on company employment. Procrastination and packaging improvements, on the other hand, were two of the most popular hobbies. From there, it became clear that green distribution was critical to the supply chain's smooth operation.

Although Council (2010) discussed wide range of issues relating to green logistics, the study did not discuss the perception of other stakeholders such as the suppliers, customers and the government. The study also did not explore the implementation of green logistics in other industries but only concentrated on major transportation company. This study therefore aims to close these gaps by addressing the level of other green procurement practices and incorporating the views of other stakeholders.

Salma (2014) investigated the impact of green operations techniques on commercial banks' financial performance in Kenya. The goal of the study was to examine the adoption of green

operations techniques and their influence on commercial banks' financial performance in Kenya. The study's goals were to determine the extent to which Kenyan commercial banks have used green operations practices, the impact of green operations practices on Kenyan commercial banks' financial performance, and the challenges that Kenyan commercial banks face in adopting green operating procedures.

A descriptive design was used in the research. It went after Kenya's 44 commercial banks. The information was gathered from both primary and secondary sources. The second set of Return on Investments data came from Kenyan banks' published financial reports. A systematic questionnaire was used to obtain basic data, which was then regulated by subtraction and subsequent selection. Banks used a variety of green operating practices, including environmental rules and policies, green borrowing, green processes and procedures, and green products and services, according to the report. It also found that banks had obstacles in adopting green processes due to poorly defined objectives, insufficient infrastructure to support these programs, limited training and certification of staff, and mandatory and cumbersome systems for checking or failing green operating procedures. Finally, the study discovered a non-significant positive association between green operations practices adoption and financial success. The study, on the other hand, concentrated on determining the financial performance of selected institutions, leaving a gap that this study aims to fill by examining the non-financial performance of selected manufacturing enterprises as well as the internet’s flexibility.

2.4. Conceptual Framework

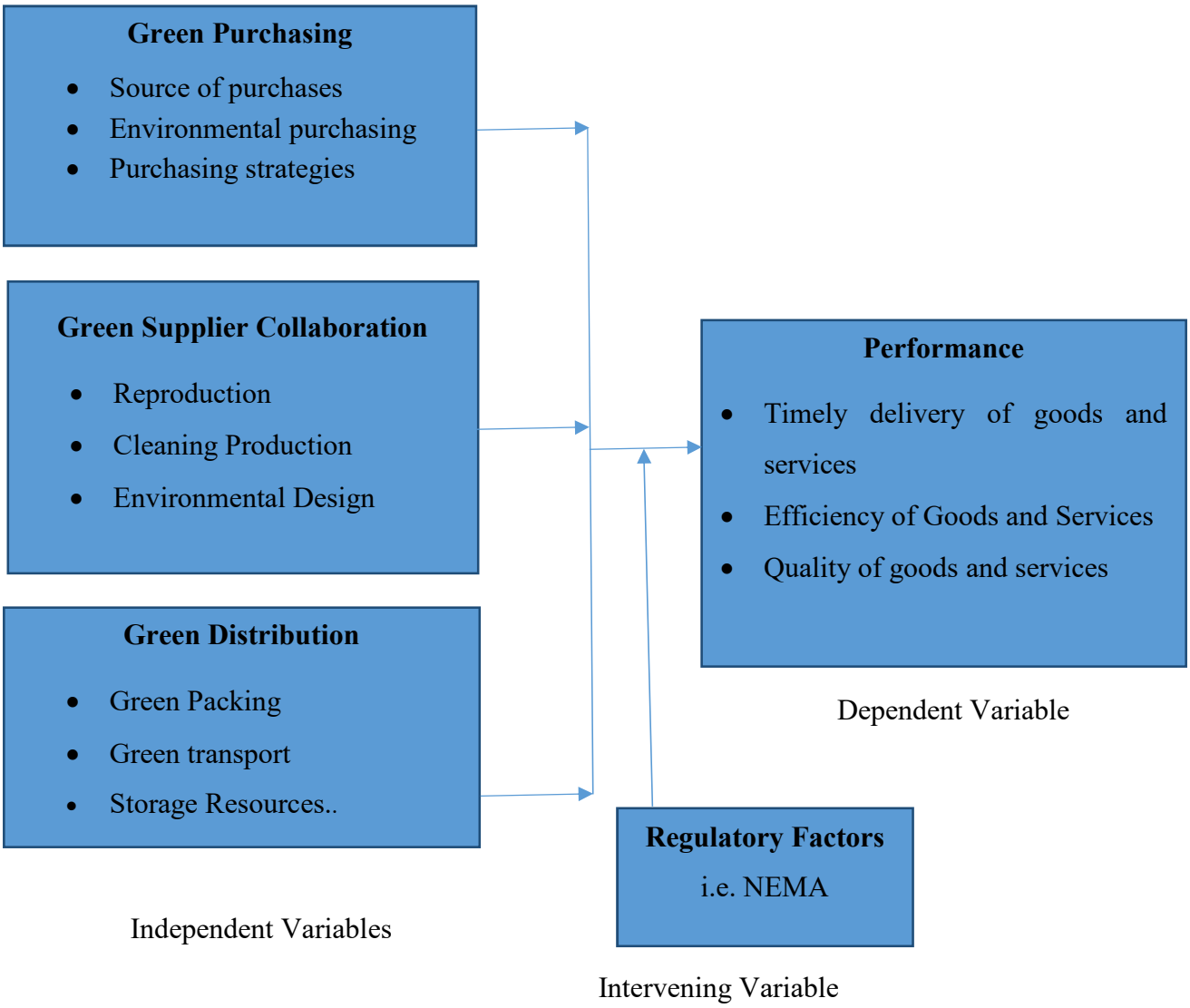

Figure 1. 1. Conceptual framework

Source: Researcher 2019

2.4 Operationalization of study variables.

2.4.1 Green Purchasing

This is an environmental purchase that involve activities such as reduction, recycling and recycling during purchase (Vachon & Klassen, 2007). Apart from that, green procurement is a business solution that focuses on the environment and economics, as well as the concept of finding a variety of products and services that have a low environmental impact (Salam 2008).

A five-level Likert scale for respondents was used to determine how the following variables under the green purchase affect the performance of manufacturing firms in Kisumu, Kenya: source of procurement, purchase strategies, environmental purchases, and timely purchases were used to quantify green purchasing as a variable.

2.4.2 Green Supplier collaboration

This is a type of manufacturing process that uses low-impact inputs, is extremely efficient, and produces little or no waste or trash. Green manufacturing can result in lower raw material prices, more productivity, fewer environmental and labor costs, and a better image for Atlas, Florida. Virjoef and Koskella (2000), define regeneration as an industrial procedure for regenerating aging products

Clean production, soft production, environmental design, and recycling were used to rate the green supplier as a variable, and the Likert level five scales of respondents were used to determine the extent to which the following changes under the green supplier affect the performance of manufacturing firms in Kisumu Kenya.

2.4.3 Green Distribution.

The products generated must reach the market in a timely manner; the market must be informed of the product's availability, features, and capabilities. This necessitates effective distribution and marketing strategies.

Green distribution encompasses environmentally friendly packaging, transportation, inventory levels, and storage areas. Due to their effects on product transit features, packaging factors such as size, shape, and materials contribute to distribution. Better packaging, together with altered loading patterns, can help save money on materials, boost warehouse and trailer space, and reduce the amount of handling necessary (J.C. Ho, M.K. Shalishali). Green distribution is achieved by; green packaging which, according to Hesta & Blecker (2007), includes; reduce

packaging, use “green” packaging, emphasize the importance of collaborating with the seller to match packaging, promote and accept return packaging, and promote reuse, renewal, and repackaging of package materials Another crucial part of green distribution is the storage center. Different sorts of objects should be able to be stored in storage. Furthermore, the design and construction of storage rooms must meet the criteria of a non-polluted environment while enhancing moisture retention, corrosion resistance, and waterproofing, among other qualities (Zhang and Zheng, 2010). Central to the distribution of transport, Fuel, transportation, infrastructure, and operational processes, according to Shultz and Holbrook (2009), are significant variables to consider when establishing green transportation. To increase green transportation, Zhu and Lai highlight different means of transportation such as direct delivery to the user region, employing alternative fuel vehicles, and distributing products in large groups rather than small groups, according to Zhu.

To quantify the green distribution as a variable, respondents' Likert level five scales will be used to see how much the following changes in the green distribution affect the performance of manufacturing firms in Kisumu, Kenya: green packaging, greenhouses, green transportation, and lower inventory levels.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research methodologies employed in this study. Introduced the study's design and the target population's sample size. Additionally, this chapter has discussed the validity of the questionnaire. Finally, this chapter deals with the ethical processes identified during the study.

3.2. Research Design.

Cross-sectional survey research was used in this study. Cross sectional survey research, as defined by Cooper & Schindler (2014), is a data collection procedure used to answer questions concerning the present status of research. This was crucial in the study because it allowed for the collecting of consistent data that revealed the true nature of the problem in Kisumu County's manufacturing firms.

3.3 Study Area.

Kisumu, Kenya's third largest city, is situated on the beaches of Lake Victoria and covers an area of 417 km^2. The city has a population of approximately 500,000 people, according to the Kisumu District Government (2013), and is predicted to grow at a rate of 2.8 percent per year, resulting in increased infrastructure and service delivery complexity (Munala and Moirongo, 2011).

Kisumu was chosen as a place of learning because it is mainly the city of Juakali which is dominated by manufacturing factories and is surrounded by many non-governmental organizations and state-owned enterprises. These state-owned enterprises and many non-governmental organizations rely heavily on manufacturing companies to operate efficiently. Furthermore, as the city's population grows, current waste management difficulties will worsen, increasing the likelihood of increased contamination and exposing citizens to associated health hazards.

Manufacturing activities often have a significant environmental footprint due to resource consumption, waste generation, and energy usage. Green procurement practices in manufacturing can play a crucial role in mitigating these impacts by promoting sustainable sourcing, production, and waste management.

3.4 Target Population.

The target population is the group from which the researcher wishes to draw broad generalizations about the overall population (Obwatho, 2014). The target population in this study was 141 employees which included procurement staff, finance department, production department and transport department from the six firms. The firms are; Kenya Breweries Limited, Tuffoam Mattresses Limited, United Bread Manufactures Limited, Rai Cement Limited, Crown Paints Limited and Equator Bottlers Limited. Employees from all six organizations' procurement, finance, manufacturing, and transportation divisions were included in the study. As a result, there were 15 procurement officers, 19 finance officers, 64 production officers, and 43 transportation officers in the population. As a result, the population was 141, as indicated in Table 3.1.

Table 3. 1. Study Population

	Section	Kenya Breweries LTD	Tuffoam Mattresses LTD	United Bread Manufacturers LTD	Rai Cement LTD	Crown Paints LTD	Equator bottlers LTD	Total
1.	Procurement	03	02	02	03	02	03	15
2.	Finance	05	03	02	04	02	03	19
3.	Production	11	15	06	12	11	09	64
4.	Transport	08	07	05	09	07	07	43
Total		**27**	**27**	**15**	**28**	**22**	**22**	**141**

Source: Researcher 2019

3.5 Sample Size and Sampling Techniques.

The sample size is large enough to represent a huge population (Bryman, 2012). The sample size was calculated using Yamane's (1967) formula. The sample size was 104 people, chosen using Yamane's (1967) formula.

According to Yamane (1967)

$$n = \frac{N}{[1+N(e)^2]}$$

Where n= the sample size

N= the population

e= the error limit (0.05 on the basis of 95% confidence level)

Therefore; $$n = \frac{141}{[1+141(0.05)^2]}$$

n =104

The study used a sample size of 104 people. As demonstrated in Table 3.2, this sample size is suitably representative and evenly distributed across each sector.

Table 3. 2: Sample population

SNo.	SECTION	Kenya Breweries	Tuffoam Mattresses	United Bread Manufacturers	Rai Cement	Crown Paints	Equator Bottlers	Total sample size
1	Procurement	02	02	02	02	02	02	12
2	Finance	03	03	02	02	02	02	14
3	Production	08	10	03	09	08	07	45
4	Transport	06	05	05	07	05	05	33
	Total	**19**	**20**	**12**	**20**	**17**	**16**	**104**

Source: (Researcher 2019)

3.6 Sampling Procedure

The practice of picking a few examples from a target group to offer information that may be utilized to make decisions about a much broader population is known as sampling (Mugenda, 2008). Stratified proportionate sampling was used to determine the sample size in each stratum. A stratified sampling method was adopted to give a fair representation to the designated sections in the manufacturing firms in Kisumu County, Kenya using the proportionality. In addition, random sampling was used to pick the respondents from the stratum. The simple random sampling techniques assisted to select a representative sample from the sample population. This ensured that each member of the population had equal and independent chances of being included in the sample in order to produce a random sample. (Mugenda, 2008).

3.7 Research Instruments.

To acquire primary data, the researcher employed a standardized questionnaire and interview guide. The questionnaire is a set of pre-created written questions in which respondents write down the answers usually based on their own opinion. The questions were based on a 5-point Likert scale. Respondents were asked to rate their level of agreement on a five-point scale: Very Small Extent, Small Extent, Medium Extent, Great Extent, and Very Great Extent on the Likert

scale. The questionnaires were issued to the operational managers in the four departments within the manufacturing firms.

The interview guide was based on a set of questions about specific topics with green procurement practices and performance of manufacturing firms in Kisumu County, Kenya. This helped to verify and request additional data not included in the questionnaire. The interview schedules were administered to head of departments within the manufacturing firms. The interview schedules took around 15 minutes per session.

3.8 Reliability and Validity

3.8.1 Reliability

Reliability is defined as the degree to which test scores remain consistent over time when the same topic is tested under the same settings. Cronbach's alpha was utilized by the researcher to assess reliability. Zurah (2013) states that the standard agreed with Cronbach's low alpha limits is greater than 0.70. The calculated reliability coefficient, using the Flanagan Formula shown below, of the instrument has been tested against the minimum acceptable indicator.

$$\boldsymbol{R_t = 2[1 - \frac{\delta_1{}^2 + \delta_2{}^2}{\delta_t{}^2}]}$$

Where: R_t= Reliability Coefficient of Test

δ_1=Standard Deviation of scores of 1st Half

δ_2 = Standard Deviation of scores of 2nd Half

δ_t = Standard Deviation of scores of whole Test

The Cronbach's alpha coefficient in Table 3.3 showed that all the variables in the study was more than.70. Therefore, the scale variables were deemed reliable for the study. Further, the overall Cronbach's Alpha index was .917 was obtained. Since Cronbach's Alpha was over .70, the study considered the tool as reliable to use.

3.8.2 Validity

Validity refers to the degree to which the outcomes of data analysis should be used in study. (Mugenda & Mugenda, 2003). The verification index was calculated based on the acceptability

of the content. The degree to which a research tool adequately covers a study topic is referred to as content validity. This is done by placing the tool in the panel of experts (managers) to check that it captures all the required information as directed by the research work framework. Experts assessed the findings, and the content's suitability was determined using the formula:

$$CVI = \frac{K}{N}$$

Where: K= Total number of items in the questionnaire declared valid by both experts.

N= Total number of items in the questionnaire.

$CVI = \frac{17}{20} = 0.85$

The estimated CVI was compared to Amin's (2005) recommendation of a minimum acceptable value of 0.70. In this case, the 0.85 content rating index was calculated and as a result, the research tool was considered valid for research.

The face's propriety is that the examination appears to measure what it purports to measure. The goal of this test was to see if the purpose was evident, even for untrained respondents with high facial performance. The adequacy of the lower face was assessed in cases where the aim was unclear. (Nevo, 1985). Respondents were asked to score the test's fitness as reflected in them in order to acquire an accurate measure of facial fitness. The tool surface's appropriateness was determined using the Likert Scale.

3.9 Pilot study

A pilot study is the initial phase in the research methodology, and it's usually a smaller study that helps plan and modify the big study. The major trial is frequently preceded by a pilot or small-scale study to assess its validity. It was used to evaluate the participants' inclusion and exclusion criteria. The study questionnaire was piloted on 10 respondents from the manufacturing firms in Kisumu County. This was in line with a pilot study target sample of a minimum of 10% of the targeted population (Kothari, 2010). Questionnaire were given to 10 respondents from the manufacturing firms in Kisumu County. The finding of the pilot test was shown in Table 3.3.

Table 3. 3. Pilot Test

Scale Variables	Cronbach's Alpha	N of Items
Green purchasing	.922	10
Green supplier collaboration	.852	10
Green distribution	.926	10
Performance	.966	10
Overall Cronbach's Alpha	**0.917**	

Table 3.3 revealed the Cronbach's alpha coefficient for all of the variables in the study to be more than.70. Therefore, the scale variables were deemed reliable for the study. Further, the overall Cronbach's Alpha index was .917 was obtained. Since Cronbach's Alpha was over .70, the study considered the tool as reliable to use.

3.10 Data Collection Procedure.

Before beginning the data collecting process, the researcher needed to receive a submission letter from the university in order to obtain permission to collect data in the field. The researcher also applied and was granted permission by the National Commission for Science, Technology, and Innovation (NACOSTI) to conduct research.

The researcher administered the data collection instruments to the respondents with the assistance of experienced research assistants. For individuals who required assistance, the research assistant guided the respondents. Respondents were given a one-day window to complete the questionnaires. With the involvement of research assistants, interview guides received immediate responses.

Secondary data refers to information gleaned from previously obtained information. This type of information was gathered from reference materials that include important information that were relevant to the investigation.

3.11 Data analysis and Presentation

After data were collected from the respondents, data sorting, categorization and coding was done. The researcher used Statistical Package for Social Sciences program (SPSS Version 21) to analyze data. This program is capable of providing complete data management as well as a wide range of statistical analysis capabilities that can examine data of various sizes. (Muijs,2004). The advantage of this program is that it can be utilized to examine high-quality data, while descriptive statistics were used to convey quantitative conclusions. The regression analysis produced a statistic that described the relationship between two variables, but the correlation analysis assisted in determining the linear relationship's strength, or how closely the variables are related. (Mutai, 2000). The study was guided by the following regression model in order to establish a relationship between the study variables.

$$\boldsymbol{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e}$$

Where: Y= Performance

X_1= Green Purchasing

X_2= Green supplier Collaboration

X_3= Green Distribution

e = Error Term

β_0=The Model Constant

$\beta_{1,2,3}$=Regression Coefficients

At a value level of 5%, the regression model assumed an independent, uniform, and often random distribution with zero definition and a continuous difference. The findings of the study were presented in the form of frequency tables.

3.12 Ethical Issues.

The ethical principles that a researcher should consider in all research methodologies at all phases of research design are referred to as ethical concerns. The researcher acquired a letter of introduction from the institution before moving on to the area of data collection. The researcher was careful not to harm the respondent by asking trivial questions, using bad language or making the respondents uncomfortable. Respondents' consent was sought by informing them of the

purpose of the research not for commercial or personal purposes but for educational purposes. Respondents were guaranteed anonymity and secrecy because they were not obliged to reveal their identity in the survey.

CHAPTER FOUR

4.0 RESULT/FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

The findings of the study were presented in this chapter, which was organized as follows: presentation of response rate, presentation of descriptive statistics results, inferential statistics results and finally presentation of thematic analysis.

4.2 Response rate

The researcher issued 104 questionnaires to the 104 sampled respondents. Ninety-five (95) out of 104 respondents completed and returned the research questionnaires. The response rate on the returned questionnaires was 91.3 percent. In a survey, Mugenda & Mugenda (2008) said that a response rate of 50.0 percent was satisfactory. Therefore, since the above response rate met the condition, it was considered appropriate for this study

4.3 Descriptive Statistics results

4.3.1 Bio data of the respondents

Gender, level of education, age, and years of experience in the organization were all asked for in the survey. Table 4.1 shows the descriptive result.

Table 4. 1. Descriptive statistics for Bio data of the respondent

Category		Frequency	Percent
Gender	Female	65	68.4
	Male	30	31.6
	Total	**95**	**100.0**
Level of education	Primary	9	9.5
	Secondary	22	23.2
	College	29	30.5
	University	35	36.8
	Total	**95**	**100.0**
Age	25 to 35 years	19	20.0
	36 to 45 years	68	71.6
	above 45 years	8	8.4
	Total	**95**	**100.0**
Experience in the firm	less than 3 years	9	9.5
	3-10 years	57	60.0
	above 10 years	29	30.5
	Total	**95**	**100.0**

Source: Field Data (2021)

Table 4.1 shows that females made up 68.4 percent (65) of the respondents, while males made up 31.6 percent (30). The findings indicate that the female gender dominated the male gender. This can further be interpreted to mean that the employment in this sector is skewed to the female gender. Further, the results showed that 9.5% (9) of the respondents had primary education, 23.2% (22) of them had secondary education, 30.5% (29) of the respondents had college education while 36.8% (35) of them had university education. This shows that the respondents were literate and was capable of understanding the green procurement issues requested in the questionnaire. Also, table 4.1 revealed that 20.0% (19) of the respondents were of age 25-35 years, 71.6% (68) of them were 36-45 years while 8.4% (8) of the respondents were above 45 years. This shows that there is more youthful population in the manufacturing industry. In addition, the survey found that 9.5% (9) respondents had less than 3 years' experience in the company, 60.0% (57) of them had 3-10 years' experience in the company and 30.5% (29) respondents have more than 10 years' experience in the company. This shows that workers in this field have the right experience that can improve the performance of manufacturing firms.

4.3.2 Green purchasing on the performance of manufacturing firms in Kisumu, Kenya.

The first objective of the study was to assess the effect of green purchasing on the performance of manufacturing firms in Kisumu, Kenya. Table 4.2 shows the descriptive results.

Table 4. 2. Descriptive statistics on green purchasing

Statement	1	2	3	4	5	M	SD
The organization makes material choices to ensure that the items selected are not so harmful to the environment	1(1.1%)	1(1.1%)	8(8.4%)	18(18.9%)	67(70.5%)	4.57	.781
The organization buys energy-efficient products or products that require less energy to make	1(1.1%)	1(1.1%)	16(16.8%)	17(17.9%)	60(63.2%)	4.41	.881
The organization has officially introduced the design of products that reduce the consumption of goods and services	0(0.0%)	3(3.2%)	10(10.5%)	18(18.9%)	64(67.4%)	4.51	.810
The organization buys equipment that are easy to repair.	0(0.0%)	1(1.1%)	12(12.6%)	20(21.1%)	62(65.3%)	4.51	.756
Overall Mean Score						**4.5**	**0.807**

Key: 1=Very Small Extent; 2=Small Extent; 3= Moderate Extent;4=Great Extent and 5=Very Great Extent; M=Mean; SD=Standard Deviation

Source: Field Data (2021)

The findings in Table 4.2 reveals that majority of respondents (70.5%) strongly agree that the organization makes material choices to ensure selected items are environmentally friendly while 1.1% of the respondents strongly disagree. Also, 63.2% of the respondents strongly agrees that the organization buys energy-efficient products or those requiring less energy to make while

1.1% strongly disagrees. Further, 67.4% of the respondents strongly agree that the organization has officially introduced products designed to reduce consumption of goods and services. Finally, 65.3% of the respondents strongly agrees that the organization buys equipment that is easy to repair. The overall mean for all statements combined is 4.50, indicating a high level of agreement with green purchasing practices within the manufacturing firms in Kisumu Kenya.

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The study carried out Pearson Correlation to test the research hypothesis. The research hypothesis was H_{O1}: There is no significant effect of green purchases on the performance of manufacturing firms in Kisumu County, Kenya. The finding is shown in Table 4.3.

Table 4. 3: Testing Hypothesis between Green Purchasing and Performance

		green purchasing	performance
green purchasing	Pearson Correlation	1	.798**
	Sig. (2-tailed)		.000
	N	95	95
performance	Pearson Correlation	.798**	1
	Sig. (2-tailed)	.000	
	N	95	95

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Field Data (2021)

The finding in Table 4.3 shows that Correlation Coefficient was r = .798 at a significant value less than 0.05. Since the p-value was less than 0.05, the null hypothesis was rejected. Therefore, the study concluded that there was a significant effect of green purchasing on performance of manufacturing firms in Kisumu County, Kenya.

The above results are in line with Kamonya (2013) who established that green procurement processes have an impact on small and medium-sized businesses in Nairobi. Green Procurement Practices focuses on the goal of preventing land pollution, which aims to remove or minimize threats to human health and the environment

As green procurement practices are based on the principle of pollution prevention, there is a need for management of manufacturing firms in Kisumu Kenya to use appropriate selection strategies to ensure that selected materials are not as harmful to the environment. In addition, managers

should make sure they purchase energy-efficient products or products that require less energy to make. This will boost the growth of manufacturing firms in Kisumu Kenya.

4.3.3 Green supplier collaboration and performance of manufacturing firms in Kisumu County, Kenya

The second objective of this study was to establish the effect of the collaboration of green suppliers on the performance of manufacturing firms in Kisumu County, Kenya. In this section, the respondents were required to state the level of their agreement or disagreement about the effect of green supplier collaboration on the performance of manufacturing firms in Kisumu County, Kenya. Their responses were based on 5-likert scale where: 1 represented a very small extent; 2 represented a small extent; 3 represented a moderate extent; 4 represented a great extent and 5 represented a very great extent. The descriptive statistics was illustrated in Table 4.3.

Table 4. 4. Descriptive statistics on green supplier collaboration

Statement	1	2	3	4	5	M	SD
The organization looks for suppliers who have received or are in the process of obtaining an ISO 14000 certificate.	1(1.1%)	2(2.1%)	12(12.6%)	15(15.8%)	65(68.4%)	4.48	.874
The organization formally cooperates with its suppliers for environmental objectives.	2(2.1%)	3(3.2%)	6(6.3%)	16(16.8%)	68(71.6%)	4.53	.909
The organization develops and maintain data base of suppliers in which information relating to environmental conduct is maintained.	3(3.2%)	4(4.2%)	8(8.4%)	20(21.1%)	60(63.2%)	4.37	1.022
The organization officially introduced the use of materials and components that can be used and recycled	2(2.1%)	7(7.4%)	7(7.4%)	17(17.9%)	62(65.3%)	4.37	1.042
Overall Mean Score						**4.44**	**0.962**

Key: 1=Very Small Extent; 2=Small Extent; 3= Moderate Extent;4=Great Extent and 5=Very Great Extent; M=Mean; SD=Standard Deviation

Source: Field Data (2021)

According to the study's findings in Table 4.3, majority of respondents (68.4%) strongly agree that the organization looks for suppliers with ISO 14000 certification or in the process of obtaining it while a very small proportion (1.1%) strongly disagree. Also, significant portion of the respondents (71.6%) strongly agrees that the organization formally cooperates with suppliers for environmental objectives while only a very small percentage (2.1%) strongly disagrees. Further, a considerable number of respondents (63.2%) strongly agree that the organization develops and maintains a database of suppliers with environmental conduct information Finally, a substantial portion of respondents (65.3%) strongly agrees that the organization has introduced recyclable materials and components. The overall mean for all statements combined is 4.44, indicating a high level of agreement with green supplier collaboration practices within the manufacturing firms in Kisumu Kenya.

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The study carried out Pearson Correlation to test the research hypothesis. The research hypothesis was $H_{O2:}$ There is no significant effect of the collaboration of green suppliers on the performance of manufacturing firms in Kisumu County, Kenya. The finding is shown in Table 4.5.

Table 4. 5: Testing Hypothesis between Green Supplier Collaboration and Performance

		green supplier collaboration	performance
green supplier collaboration	Pearson Correlation	1	.712**
	Sig. (2-tailed)		.000
	N	95	95
performance	Pearson Correlation	.712**	1
	Sig. (2-tailed)	.000	
	N	95	95

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Field Data (2021)

The finding in Table 4.5 shows that Correlation Coefficient was r = .712 at a significant value less than 0.05. Since the p-value was less than 0.05, the null hypothesis was rejected. Therefore, the study concluded that there was a significant effect green supplier collaboration on performance of manufacturing firms in Kisumu County, Kenya.

The study's findings were consistent with those of Vanalle and Santos (2011), who stated that the automotive sector has stretched its environmental standards via its supply chain by mandating retailers to adopt a more sustainable operating system. Furthermore, according to Vanalle and Santos (2011), a company needs the help of its suppliers to improve its environmental performance, particularly when it demands mitigation, remodeling, or redesign from its vendors. Has had a significant impact on the company's competitiveness.

The results of the study require the need of managers of manufacturing firms in Kisumu Kenya to adopt and develop good relationships with the relevant green suppliers. For the manufacturing industry to spur their performance there should be a proper and effective collaboration between the green suppliers and the management. The management can keep on the proper database of the green suppliers and also looks for those who are ISO 14000 certified in order improve its performance. Many times, when the management fails to have proper list of green suppliers and poor cooperation with the green suppliers the company ends up with poor performance because of lack of quality service delivery by the green suppliers or vendors. It is therefore high time for the management of the manufacturing firms to keep on quality relationship with green suppliers so that they enhance their performance. Organizations should also make an extra effort to develop suppliers into strategic supply chain partners.

4.3.4 Green distribution and performance of manufacturing firms in Kisumu Kenya

The final objective of the study was to assess the effect of green distribution on the performance of manufacturing firms in Kisumu County, Kenya. In this part, the respondents were required to state the level of their agreement or disagreement about the effect of green distribution on the performance of manufacturing firms in Kisumu County, Kenya. Their responses were based on 5-likert scale where: 1 represented a very small extent; 2 represented a small extent; 3 represented a moderate extent; 4 represented a great extent and 5 represented a very great extent. The descriptive statistics were shown in Table 4.6.

Table 4. 6. Descriptive statistics on green distribution.

Statement	1	2	3	4	4	M	SD
Organization is eco-design packaging materials for productive products.	1(1.1%)	12(12.6%)	6(6.3%)	15(15.8%)	61(64.2%)	4.29	1.110
The organization has officially introduced the use of materials and components that reduce the use of assets and assets in its storage areas.	2(2.1%)	2(2.1%)	9(9.5%)	15(15.8%)	67(70.5%)	4.51	.909
The organization has officially started planning routes to avoid urban congestion by another method	1(1.1%)	4(4.2%)	7(7.4%)	15(15.8%)	68(71.6%)	4.53	.885
The organization has invested in modern infrastructure to reduce service delivery	1(1.1%)	5(5.3%)	7(7.4%)	21(22.1%)	61(64.2%)	4.51	.933
Overall Mean Score						**4.46**	**0.959**

Key: 1=Very Small Extent; 2=Small Extent; 3= Moderate Extent;4=Great Extent and 5=Very Great Extent; M=Mean; SD=Standard Deviation

Source: Field Data (2021)

According to Table 4.6, a significant portion of respondents (64.2%) strongly agrees that the organization is eco-designing packaging materials for productive products. Moreover, the majority of the respondents (70.5%) strongly agrees that the organization has officially introduced the use of materials and components to reduce the use of assets and space in its storage areas. Also, a considerable number of respondents (71.6%) strongly agrees that the organization has officially started planning routes to avoid urban congestion by other methods. Finally, a significant portion of respondents (64.2%) strongly agrees that the organization has invested in modern infrastructure to reduce service delivery. The overall mean score for all statements combined is 4.46, indicating a high level of agreement with green distribution practices within the manufacturing firms in Kisumu Kenya.

The study carried out Pearson Correlation to test the research hypothesis. The research hypothesis was HO_3: There is no significant effect of green distribution on the performance of manufacturing firms in Kisumu County, Kenya. The finding is shown in Table 4.7.

Table 4. 7: Testing Hypothesis between Green Distribution and Performance

		green distribution	performance
green distribution	Pearson Correlation	1	.757**
	Sig. (2-tailed)		.000
	N	95	95
performance	Pearson Correlation	.757**	1
	Sig. (2-tailed)	.000	
	N	95	95

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Field Data (2021)

The finding in Table 4.7 shows that Correlation Coefficient was r = .757 at a significant value less than 0.05. Since the p-value was less than 0.05, the null hypothesis was rejected. Therefore, the study concluded that there was a significant effect green distribution on performance of manufacturing firms in Kisumu County, Kenya.

4.3.5 Performance of manufacturing firms in Kisumu, Kenya.

The general purpose of this study was to determine the effect of green procurement practices on the performance of manufacturing firms in Kisumu County, Kenya. In this part, the respondents were required to state the level of their agreement or disagreement about the effect of green procurement practices on the performance of manufacturing firms in Kisumu County, Kenya. Their responses were based on 5-likert scale where: 1 represented a very small extent; 2 represented a small extent; 3 represented a moderate extent; 4 represented a great extent and 5 represented a very great extent. The descriptive statistics were shown in Table 4.8.

Table 4. 8. Descriptive statistics on the performance of manufacturing firms in Kisumu County, Kenya.

Statement	1	2	3	4	5	M	SD
Level of timely delivery of goods and services.	1(1.1%)	5(5.3%)	7(7.4%)	21(22.1%)	61(64.2%)	4.43	.919
Rate of cost reduction.	4(4.2%)	2(2.1%)	6(6.3%)	20(21.1%)	63(66.3%)	4.43	1.007
Order fulfillment rate.	4(4.2%)	2(2.1%)	6(6.3%)	20(21.1%)	63(66.3%)	4.27	.994
Quality level of goods and services purchased.	4(4.2%)	1(1.1%)	10(10.5%)	30(31.6%)	50(52.6%)	4.19	1.003
Overall Mean Score						**4.33**	**0.981**

Key: 1=Very Small Extent; 2=Small Extent; 3= Moderate Extent;4=Great Extent and 5=Very Great Extent; M=Mean; SD=Standard Deviation

Source: Field Data (2021)

The findings in Table 4.8 shows majority of respondents (64.2%) strongly agree (rated 5) that the organization delivers goods and services timely. Also, a significant portion of respondents (66.3%) strongly agrees that the organization effectively reduces costs. Further, a majority of respondents (66.3%) strongly agrees that the organization fulfills orders efficiently. Finally, a considerable number of respondents (52.6%) strongly agree that the quality of goods and services purchased is high. The overall mean score for all statements combined is 4.33, indicating a high level of satisfaction with various aspects of green procurement practices on the performance of manufacturing firms in Kisumu County, Kenya.

4.4 Regression Analysis

Multiple regression analysis was carried out to determine the level of significance of green procurement practices on the performance of manufacturing firms in Kisumu, Kenya. A regression result is shown in Tables 4.10, 4.11 and 4.12.

Table 4. 9. Model summary of green procurement practices and performance of manufacturing firms in Kisumu

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.835[a]	.698	.688	.52203

a. Predictors: (Constant), green distribution, green purchasing, green supplier collaboration
Source: Field Data (2021)

The finding in Table 4.10, R was the correlation coefficient that indicated the relationship between the independent variables and the dependent variables. It has been noted that there is a strong correlation between green procurement practices and performance of manufacturing firms in Kisumu (R = .835; p value <.05). The coefficient of determination, R square defined the extent to which variables in dependent variables could be explained by independent variables and three independent variables examined indicate that green procurement practices contributed to a 69.8% variation in the performance of manufacturing firms in Kisumu. As a result, some of the characteristics not discovered in this study account for 30.2 percent of the performance of manufacturing firm performance in Kisumu. As a result, these modifications were critical, and they must be included in any endeavor to improve the performance of Kisumu's manufacturing firms.

Table 4. 10. ANOVA test of green procurement practices and performance of manufacturing firms in Kisumu

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.257	3	19.086	70.036	.000[b]
	Residual	24.799	91	.273		
	Total	82.055	94			

a. Dependent Variable: performance

b. Predictors: (Constant), green distribution, green purchasing, green supplier collaboration

Source: Field Data (2021)

The study results in Table 4.11 reveals that green procurement practices had a statistical impact on the performance of manufacturing firms in Kisumu (F = 70.036; p value = .000) which was an indication that the data was ready to conclude on human boundaries as a significant value (p-value) was less than 0.05. The calculated value was greater than the significant value which shows that green purchases, green distribution and green supplier collaboration all contribute to the performance of manufacturing firms. The model was significant because the significance value was less than 0.05.

Table 4. 11. Coefficients of green procurement practices and performance of manufacturing firms in Kisumu

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.403	.340		1.187	.238
	Green purchasing	.759	.131	.591	5.769	.000
	Green supplier collaboration	.184	.153	.158	1.198	.234
	Green distribution	.480	.122	.448	3.923	.000

a. Dependent Variable: Performance

Source: Field Data (2021)

As shown in Table 4.12, green purchasing is most predictable of performance, followed by the green distribution and then the green supplier collaboration with B values of .759, .480, and .184

respectively. Also, the study shows that green purchasing and green distribution were the most significant variable with significant values of .000 and green supplier collaboration was the least significant. The regression model for the above result was:

*Performance=.403+.759*green purchasing+.184*green supplier collaboration+.480*green distribution + error (1)*

Green procurement practices play a critical influence in the overall success of industrial enterprises in Kisumu, according to the study's findings. There was a need for the management of the Kisumu manufacturing companies to adopt appropriate green procurement practices to improve their performance.

4.5 Thematic Analysis

The study developed interview schedules to collect high quality data on the effect of green procurement practices on the performance of manufacturing firms in Kisumu County, Kenya. The interview schedule covered the objective areas which included: effect of green purchases, green supplier collaboration and green distribution on the performance of manufacturing firms in Kisumu County, Kenya.

On the part of the effect of green purchases on performance of manufacturing firms in Kisumu County, Kenya. The Interviews revealed that the green purchasing had effect on performance of manufacturing firms in Kisumu County, Kenya. According to reports, one of the interviewees said the following:

> *"Green purchasing helps an organization to procure less harmful materials to the environment". Also, it enables organization to buy materials that are easy to repair.*
> *[Interviewee 1]*

In addition, the study developed interview schedules on the effect of green suppliers' collaboration on the performance of manufacturing firms in Kisumu County, Kenya. The following statement was attributed to respondents:

> *"The organization is legally cooperating with its suppliers for environmental purposes and the organization is looking for suppliers who have acquired or are in the process of obtaining an ISO 14000 certificate.* [Interviewee 1,2& 3]

The study also collected quality data using interview schedules on the effect of green distribution on the performance of manufacturing firms in Kisumu County, Kenya. The following statement was recorded from respondents;

> *"The organization has officially started planning routes to avoid urban congestion by another method."* [Interviewee 1 &3]

Also, another respondent was quoted to have said;

> *"To reduce service delivery, our firm has invested in modern infrastructure."* [Interviewee2]

In addition, interview schedules were utilized to collect quality data from respondents about the effect of green procurement practices on performance of manufacturing firm in Kisumu County, Kenya. The following statement was recorded from the respondents;

> *"Green procurement practices have improved timely delivery of goods and services. In addition, it has minimized procurement expenditure"*
>
> [Interviewee 1 &3]

Another respondent was quoted saying the following statement;

"Green procurement practices have improved purchasing of quality goods and services".

[Interviewee 2&3]

CHAPTER FIVE

SUMMARY OF RESULTS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings, draws conclusions, makes recommendations, and identifies areas for future investigation.

5.2 Summary of results

5.2.1 Findings on the effect of green purchasing on the performance of manufacturing firms in Kisumu, Kenya

The first objective of the study was to assess the effect of green purchasing on the performance of manufacturing firms in Kisumu, Kenya. The study discovered that, majority of respondents (70.5%) strongly agreed that the organization makes material choices to ensure selected items are environmentally friendly while 1.1% of the respondents strongly disagree. Also, 63.2% of the respondents strongly agreed that the organization buys energy-efficient products or those requiring less energy to make while 1.1% strongly disagrees. Further, 67.4% of the respondents strongly agreed that the organization has officially introduced products designed to reduce consumption of goods and services. Finally, 65.3% of the respondents strongly agreed that the organization buys equipment that is easy to repair. The overall mean for all statements combined was 4.50, indicating a high level of agreement with green purchasing practices within the manufacturing firms in Kisumu Kenya.

5.2.2 Findings on the effect of green supplier collaboration on the performance of manufacturing firms in Kisumu Kenya.

The second objective was to establish the effect of the green supplier collaboration on the performance of manufacturing firms in Kisumu Kenya. The survey found that majority of respondents (68.4%) strongly agreed that the organization looked for suppliers with ISO 14000 certification or in the process of obtaining it while a very small proportion (1.1%) strongly disagreed. Also, significant portion of the respondents (71.6%) strongly agreed that the organization formally cooperated with suppliers for environmental objectives while only a very small percentage (2.1%) strongly disagreed. Further, a considerable number of respondents

(63.2%) strongly agreed that the organization developed and maintained a database of suppliers with environmental conduct information Finally, a substantial portion of respondents (65.3%) strongly agreed that the organization has introduced recyclable materials and components. The overall mean for all statements combined is 4.44, indicating a high level of agreement with green supplier collaboration practices within the manufacturing firms in Kisumu Kenya.

5.2.3 Findings on the effect of green distribution on the performance of manufacturing firms in Kisumu Kenya.

The final objective was to assess the effect of green distribution on the performance of manufacturing firms in Kisumu Kenya. The survey found that a significant portion of respondents (64.2%) strongly agreed that the organization is eco-designing packaging materials for productive products. Moreover, the majority of the respondents (70.5%) strongly agreed that the organization has officially introduced the use of materials and components to reduce the use of assets and space in its storage areas. Also, a considerable number of respondents (71.6%) strongly agreed that the organization has officially started planning routes to avoid urban congestion by other methods. Finally, a significant portion of respondents (64.2%) strongly agreed that the organization has invested in modern infrastructure to reduce service delivery. The overall mean score for all statements combined is 4.46, indicating a high level of agreement with green distribution practices within the manufacturing firms in Kisumu Kenya.

4.2.4 Findings on the effects of green procurement practices on the performance of manufacturing firms in Kisumu, Kenya.

The general purpose of this study was to obtain the results of green procurement practices on the performance of manufacturing firms in Kisumu, Kenya. The survey found that majority of respondents (64.2%) strongly agreed that the organization delivered goods and services timely. Also, a significant portion of respondents (66.3%) strongly agreed that the organization effectively reduced costs. Further, a majority of respondents (66.3%) strongly agreed that the organization fulfills orders efficiently. Finally, a considerable number of respondents (52.6%) strongly agreed that the quality of goods and services purchased was high. The overall mean score for all statements combined is 4.33, indicating a high level of satisfaction with various

aspects of green procurement practices on the performance of manufacturing firms in Kisumu County, Kenya.

The regression result has revealed a strong correlation between green procurement practices and performance of manufacturing firms in Kisumu (R = .835; p value <.05). The R square shows that green procurement practices had contributed to 69.8% variation in performance of manufacturing firms in Kisumu. It also showed that green procurement practices had a significant statistical impact on the performance of Kisumu's manufacturing firms (F = 70.036; p value = .000).

5.3 Conclusion

5.3.1 The study concluded that green purchasing had a statistical effect on the performance of industrial enterprises in Kisumu, which was the study's initial goal.

5.3.2 The study concluded that green supplier partnership had a statistical influence on the performance of manufacturing enterprises in Kisumu, which was the study's second goal.

5.3.3 The study concluded that green distribution had effect on the performance of industrial enterprises in Kisumu, which was the study's final objective.

5.3.4 The study concluded that green procurement practices played a vital effect on the overall performance of the manufacturing firms in Kisumu County, Kenya.

5.4 Recommendations

Following the study's findings, the following suggestions were made:

For the first goal, the study recommended that managers of manufacturing enterprises in Kisumu should employ an adequate green purchasing strategy in order to boost performance.

In addition, the study recommended that, in order to obtain better results, there is a need to increase the collaboration of green providers.

Based on these findings, it became clear that there was a need for management to embrace the distribution of raw materials within the manufacturing firms in Kisumu Kenya. In order for the manufacturing industry to see efficiency it was necessary to plan eco-design packaging materials for productive products. Also, managers should use route planning to avoid urban congestion by another method. In addition, management needed to keep investing extensively in contemporary

infrastructure in order to minimize delivery times. Management's failure to develop a green distribution strategy could have a substantial influence on manufacturing enterprises' success.

In order to increase quality performance, the study recommended that managers of manufacturing enterprises in Kisumu employ the suitable green distribution strategy.

5.5 Suggestion for further research

First, the report advises that similar research be conducted in another Kenyan location. More study may be done on the effects of green procurement practices on the performance of Kenya's manufacturing sector as a result of government policy measurement.

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APPENDICES

Appendix I: Research Questionnaire

Introduction

I MAUREEN ANYANGO OYUGI of Admission number B151/4072/2018, am a Master of Business Administration Supply Chain Option student at Jaramogi Oginga University of Science and Technology. I am carrying out research on the "*Effect of Green Procurement Practices on Performance of the Manufacturing Firms in Kisumu County, Kenya"* as part of the above qualifying award requirements. I guarantee to you that the information received will be treated with confidence and the study has an academic purpose only.

Thanks in advance for your support.

Section A: Background information of the respondent.

1. What is your gender?
   Female [ ] Male [ ]
2. What is your highest level of education?
   Primary [ ] Secondary [ ] Collage [ ] University [ ]
3. What is your age?
   25-35 years [ ] 36-45 years [ ] above 45 years [ ]
4. What is your experience in the firm?
   Less than 3 years [ ] 3-10 years [ ] above 10 years [ ]

Section B: Green Purchasing and Performance of manufacturing firm

This section gathers data on the effect of green purchasing on the performance of manufacturing firms. Please indicate the extent to which you agree with the following statements regarding the green purchasing related to the performance of your manufacturing firm. Use the following Likert scale for your responses.

[1= Very Small Extent, 2= Small Extent, 3=Moderate Extent, 4= Great Extent, 5= Very Great Extent.]

No	Statement	1	2	3	4	5
1	The organization makes material choices to ensure that the items selected are not so harmful to the environment					
2	The organization buys energy-efficient products or products that require less energy to make					
3	The organization has officially introduced the design of products that reduce the consumption of goods and services					
4	The organization buys equipment that is easy to repair.					

Section C: Green Supplier Collaboration and Performance of manufacturing firms

This section collects data on the effect of green supplier collaboration on performance of your manufacturing firms. Please indicate the extent to which you agree with the following statements regarding the selection of green suppliers for the performance of your manufacturing firms. Use the following Likert scale for your responses.

[1= Very Small Extent, 2= Small Extent, 3=Moderate Extent, 4= Great Extent, 5= Very Great Extent.]

No	Statement	1	2	3	4	5
1	The organization looks for suppliers who have received or are in the process of obtaining an ISO 14000 certificate.					
2	The organization formally cooperates with its suppliers for environmental objectives.					
3	The organization develops and maintains a provider database that stores information related to environmental behavior.					
4	The organization has officially introduced the use of materials and components that can be used and recycled					

Section D: Green Distribution and Performance of manufacturing firms

This section collects data on the effect of green distribution on performance of your manufacturing firm. Please indicate the extent to which you agree with the following statements regarding the effect of green distribution on performance of your manufacturing firm. Use the following Likert scale for your responses.

[1= Very Small Extent, 2= Small Extent, 3=Moderate Extent, 4= Great Extent, 5= Very Great Extent.]

No	Statement	1	2	3	4	5
1	Organization is eco-design packaging materials for productive products.					
2	The organization has officially introduced the use of materials and components that reduce the use of assets and assets in its storage areas.					
3	The organization has officially started planning routes to avoid urban congestion by another method					
4	The organization has invested in modern infrastructure to reduce service delivery					

Section E: Green Procurement Practices and Performance of manufacturing firms

This section gathers data regarding the effect of green procurement practices on performance of your manufacturing firm. Please indicate the extent to which you agree with the following performance statements regarding the effect of green procurement practices on performance of your manufacturing firm. Use the following Likert scale for your responses.

[1= Very Small Extent, 2= Small Extent, 3=Moderate Extent, 4= Great Extent, 5= Very Great Extent.]

No	Statement	1	2	3	4	5
1	What is the level of timely delivery of goods and services?					
2	What is the rate of cost reduction?					
3	What is the order fulfillment rate?					
4	What is the quality level of goods and services purchased?					

Thank you for your participation.

Appendix II: Interview Guide

I MAUREEN ANYANGO OYUGI of Admission number B151/4072/2018, am a Master of Business Administration Supply Chain Option student at Jaramogi Oginga University of Science and Technology. I am carrying out research on the "*Effect of Green Procurement Practices on Performance of the Manufacturing Firms in Kisumu County, Kenya"* as part of the above qualifying award requirements. I guarantee to you that the information received will be treated with confidence and the study has an academic purpose only.

1. In your own view, describe the effect of green purchasing on procurement as a tool for enhancing performance in your manufacturing firm.
2. Kindly describe in your own opinion the effect of green supplier collaboration in procurement as a tool for enhancing performance in your manufacturing firm.
3. Please provide your own view on the effect of green distribution in procurement as a tool for enhancing performance in your manufacturing firm.
4. In own understanding, what is the role of green procurement practices on performance in your manufacturing firm?
5. Kindly state in your own view, the measures taken to ensure that green procurement policies are practiced by your manufacturing firm.
6. On average, would you say that green procurement practices are being practiced by your manufacturing firm effectively and diligently?

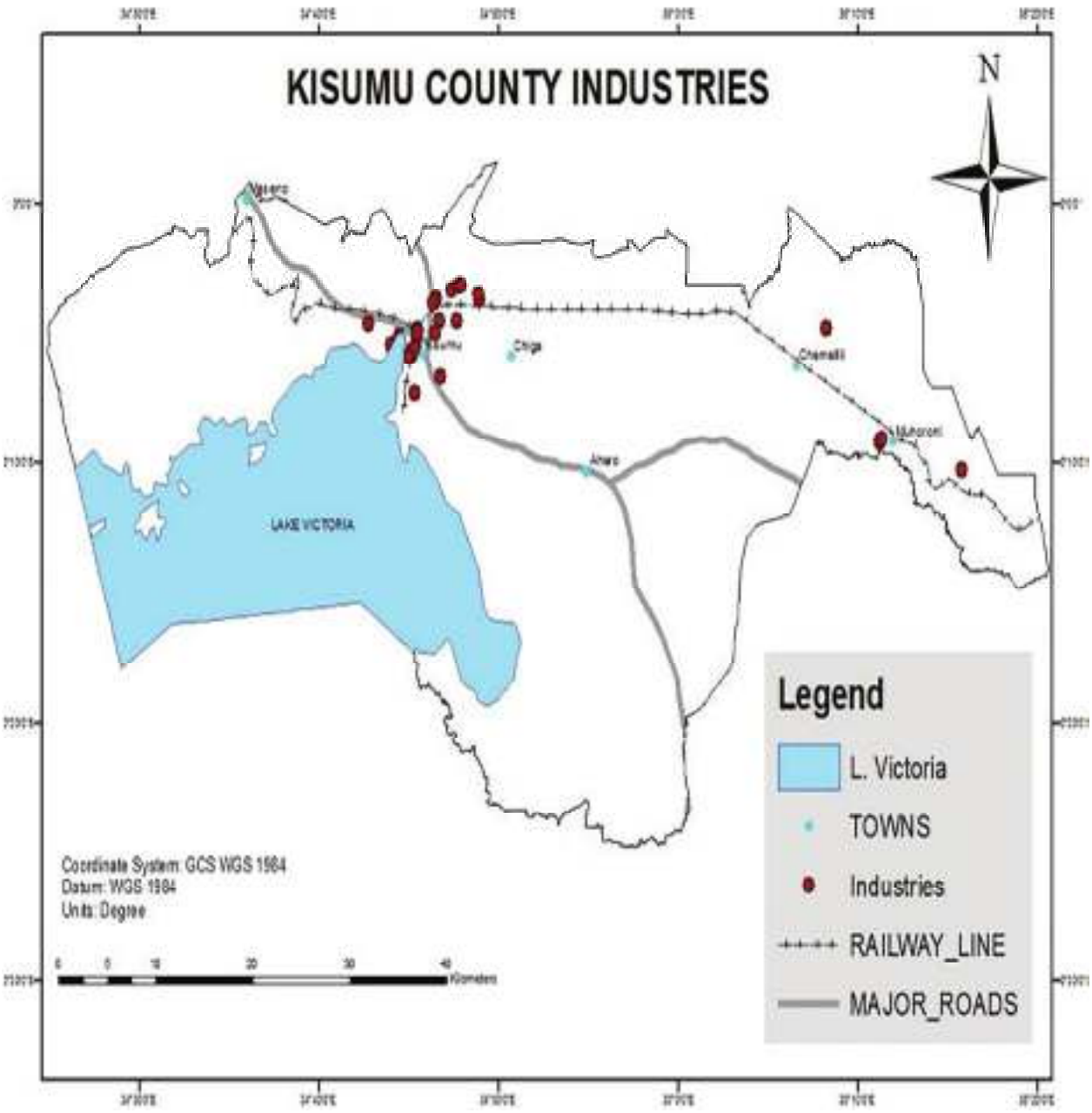
Appendix III: Research Budget

ACTIVITIES	QUANTITY	RATE	TOTAL
PROPOSAL WRITING			
Stationery			
-4quire book	1piece	340	340.00
-Pens	3pieces	30	90.00
-Flash Disk	1piece 2GB	1200	1,200.00
Type setting and printing	280 pages	40	11,200.00
Photocopying	280 pages	2	560.00
Binding	7 copies	60	420.00
Subsistence		1000	1000.00
Pilot study(transport)	1 day	1500	1500.00
SUB TOTAL			16,310.00

Appendix IV: Research Workplan

ACTIVITY	MAR-APRIL 2019	MAR-MAY 2019	MAY 2019	JUNE-JULY 2019	AUG 2019	AUG-SEP 2019	SEP-OCT 2019
Developing a Conceptual Paper and Proposal Text							
Literature review							
Designing methodology							
Submission of Proposal and Defense							
Data Collection							
Data Analysis							
Thesis writing							
Submission of thesis and defence							

Appendix V: Map of the Study Area



Source: Google Map (2021)

Appendix VI: Letter of Authorization from the Board of Post Graduate

JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

BOARD OF POSTGRADUATE STUDIES

Office of the Director

Tel. 057-2501804
Email: bps@jooust.ac.ke

P.O. BOX 210 - 40601
BONDO

Our Ref: B151/4072/2018

Date: 26th September 2019

TO WHOM IT MAY CONCERN

RE: MAUREEN ANYANGO OYUGI – B151/4072/2018

The above person is a bona fide postgraduate student of Jaramogi Oginga Odinga University of Science and Technology in the School of Business and Economics pursuing Master of Business Administration (Supply Chain Management). She has been authorized by the University to undertake research on the topic: ***"Effect Green Procurement Practices on the Performance of Manufacturing Firms in Kisumu, Kenya".***

Any assistance accorded to her shall be appreciated.

Thank you.

Prof. Dennis Ochuodho
DIRECTOR, BOARD OF POSTGRADUATE STUDIES