

**MODERATING ROLE OF STAKEHOLDER PRESSURE ON THE
RELATIONSHIP BETWEEN GREEN SUPPLY CHAIN MANAGEMENT
PRACTICES AND PERFORMANCE OF SOFT DRINKS MANUFACTURING
FIRMS IN KENYA**

BY

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**THESIS SUBMITTED TO THE SCHOOL OF BUSINESS AND ECONOMICS IN
FULFILLMENT OF REQUIREMENT FOR THE AWARD OF THE DEGREE OF
DOCTOR OF PHILOSOPHY IN LOGISTICS AND SUPPLY CHAIN
MANAGEMENT OF JARAMOGI OGINGA ODINGA UNIVERSITY OF
SCIENCE AND TECHNOLOGY**

JULY 2024

DECLARATION AND APPROVAL

Declaration

This thesis is my original work and has not been presented for an award of a diploma or conferment of degree in any other university or institution.

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ABSTRACT

In contemporary firms, there is a paradigm shift from managing supply chains to greening the supply chain. Globally the Euromonitor International report, 2022 shows that SDMFs posted \$772.5 billion in revenues, rising in market base by 88% up from 62%. In Kenya, SDMFs contributed \$2.97 billion to GDP, with the manufacturing sector making up 17.3% of the country's GDP. However, World Bank report, 2022 revealed that contribution of manufacturing firms to GDP has stagnated at 10% in the last decade with a growth of 3.1%, lower than recommended growth of 5%. KNBS report, 2023 shows that performance of SDMFs declined from 5.8% to 4.4% in 2021-2022, resulting to reduced profits, increased costs, and reduced market shares. Reports have attuned this hugely to poor adoption of Green Supply Chain Management (GSCM) and ensuing stakeholder demands. Empirical evidence on GSCM practices focused on other sectors of the economy and ignored important elements such as Green Distribution, Environmentally-Oriented Reverse Logistics. Some reviewed studies show weak relationship between GSCM practices and performance, implying moderation effects may abound. Practically, GSCM practices, Stakeholder Pressure and performance exist together. However, Stakeholder Pressure as a moderator on this model is non-existent. The current study sought to investigate the moderating role of Stakeholder Pressure on the relationship between GSCM practices and performance of SDMFs in Kenya. Specifically, the study sought to establish influence of Green Purchasing, Packaging, Distribution and Environmentally-Oriented Reverse Logistics on performance and further determine the moderating influence of Stakeholder Pressure on GSCM practices and performance relationship. Study was grounded in the Natural Resource Based View (NRBV) theory and adopted a mixed method survey design on a population of 460 senior managers. A pilot study was carried out on 45 senior managers. Primary data was obtained through questionnaire and interview schedules. Expert reviews, Bartlett's Sphericity tests ($p < 0.05$), factor correlations ($p < 0.7$) confirmed validity. Cronbach Alpha technique with values ($0.7 < \alpha$) confirmed reliability. Data were analyzed through multiple, moderated hierarchical regressions and thematic analysis. Findings revealed GSCM practices have positive significant influence and accounts for changes in performance (Green Purchasing: $\beta = 0.816$, $p < 0.05$, $R^2 = 0.66$, $p < 0.05$; Green Packaging: $\beta = 0.628$, $p < 0.05$, $R^2 = 0.394$, $p < 0.05$; Green Distribution: $\beta = 0.747$, $p < 0.05$, $R^2 = 0.558$, $p < 0.05$; Environmentally-Oriented Reverse Logistics: $\beta = 0.626$, $p < 0.05$, $R^2 = 0.392$, $p < 0.05$), implying unit adoption of the practices results in 0.816, 0.628, 0.747 and 0.626 units increase in performance respectively. Moderated regressions reveal interactive effect ($R^2 = 0.053$, $\beta = 0.274$, $p < 0.05$), implying unit increase in pressure by stakeholders improves the effect of GSCM practices on performance by 0.274 units. Study concludes: GSCM practices have a positive effect on performance, stakeholder pressure has a positive moderating effect on the relationship between GSCM practices and performance. Findings extend Hart (1995) NRBV theoretical grounds that firms can utilize natural resources to improve results. It is recommended that firms improve on their GSCM practices and leverage stakeholder pressure to enhance performance. This study only provided a snapshot picture at a single point in time thus, need for longitudinal studies. It is hoped that the study will be useful to the academia, SDMFs and inform policies by the government.

ACKNOWLEDGEMENT

Foremost, I acknowledge God for the life and times forever. My sincere gratitude goes to my supervisors Dr. Aleri Odaya and Dr. Michael Nyagol for their incessant support in the period of the thesis. Their corrections, criticism and reading through many drafts in developing this work were valuable inputs. In addition, their commitment and ‘all time’ personal support can never go unmentioned. My gratitude further goes to Dr. Renson Wanyonyi of Maseno University for all time dedication in mentorship throughout the period of this work. Further, I appreciate Dr. Dorothy Onjwa, the Head of Department of Tourism & Management Science of Jaramogi Oginga Odinga University of Science and Technology and Dr. Vitalis Mugwambo, Dean of the School of Business & Economics of Jaramogi Oginga Odinga University of Science and Technology for their support.

In a special way, I acknowledge my love and special thanks to my husband Dr. Renson Wanyonyi for giving me emotional support through constant encouragement and peaceful working environment at home, expert and professional advice during writing process and more importantly his dedicated prayers.

DEDICATION

To my husband Dr. Renson Wanyonyi, mother Pauline and father Nemwel Mayieka.

ABBREVIATIONS

CBD:	Conventional Biological Diversity
CGCSA	Consumer Goods Council of South Africa
CILTSA	Chartered Institute of Logistics and Transport South Africa, the
DV:	Dependent Variable
EMCA:	Environmental Management and Coordination Act
EMS:	Environmental Management System
EORL:	Environmentally-Oriented Reverse Logistics
EU:	European Union
GHGs:	Green House Gases
GSCM:	Green Supply Chain Management
ISO	International Standards Organizations
IV:	Independent Variable
KAM:	Kenya Association of Manufacturers
KNBS:	Kenya National Bureau of Statistics
MDGs:	Millennium Development Goals
MEMR:	Ministry of Environment and Mineral Resources
NEAP:	National Environment Action Plan
NEMA:	National Environmental Management Authority
NRBV:	Natural-Resource-Based View
PET:	Polyethene terephthalate
PPADA:	Public Procurement and Asset Disposal Act
PRISM:	Plastic Recovery Insight and Steering Model
REMA:	Rwanda Environmental Management Authority
RoK:	Republic of Kenya
SDMFs	Soft Drinks Manufacturing Firms
UNEP:	United Nations Environment Program
VIF:	Variance Inflation Factor
WHO:	World Health Organization

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CHAPTER ONE: INTRODUCTION

This chapter lays out an intuitive backdrop on Green Supply Chain Management practices and organizational performance. The chapter also lays out a captivating justification for this research and a synopsis of the scope of the study, research objectives, research hypothesis, and significance of the study as well as the limitations of the study.

1.1 Background Information

Environmental Management (EM) essential has transferred to the supply chain level, advancing maturation of the term Green Supply Chain Management (GSCM). Thus, GSCM surfaced as a means to merge the fundamentals of SCM and EM (Pan et al., 2020), consequently reaping remarkable recognition of practitioners and researchers altogether. Companies are also inclined to adopt GSCM practices on account of external factors affiliated to stakeholder pressure. Yassine (2022) affirms that executing GSCM practices in manufacturing firms reduces negative impact on the environment, while positively affects business performance. As a result, the importance of Green Supply Chain Management has been gradually gaining momentum in Kenya (Bor, 2021), albeit slowly, thus making it a good candidate for this research study.

In Kenya, some indicators have been key evidence of environmental degradation. A report from the GoK (2021) confirms that in the year 2022, the country witnessed the worst ever drought since the last 40 years; 3.4 million Kenyans faced food challenges, half a million others did not have access to water. Wildlife was not spared either as climate change was a threat to their ability to hunt, migrate and their general survival. It also meant increased health risks from disease, pests and new predators. The GoK (2021) report further confirmed that water levels decreased to worrying proportions and vegetation was no longer green. There was loss of bio-diversity and changes in species distribution. Reduced wildlife population, habitat loss and extinction of some species had also been noticed. GoK (2021) alluded that the global temperature was at 14.3 Degrees Celsius compared to 13.7 Degrees Celsius a century ago. The average sea level had also spiked between 10 Centimeters and 20 Centimeters over the same period. Dramatic increase in the emissions of GHGs into the

atmosphere were blamed for this catastrophic state of affairs. As a result, Glaciers on mountains were decreasing at an alarming rate. Projections indicated that in the next 30 years, there might not be much to see. Seasons for long rains have become shorter while short rains were longer and wetter sometimes with devastating floods. These events are evident of the fact that Mother Nature is keen on revenge.

1.1.1 Green Supply Chain Management Practices

Green Supply Chain Management (GSCM) is the unification of environmental facet with the conventional supply chain. Environmental footprints of SDMFs are related not only to inbound and outbound but also Reverse Logistics. The eccentric nature of the Soft Drinks supply chain implies that conventional GSCM practices are applicable, or are very effective. With the development in environmental awareness, matters of GSCM and environmental degeneration must be consolidated via supplier evaluation based on their environmental performance (inbound logistics), developing ecologically sound products as well as packaging (outbound logistics), take the edge off carbon emissions related with product distribution (outbound logistics) and eco-Reverse Logistics management. Backing this novel perspective of GSCM practices, four dimensions were set on to be included in this research: Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics as supported by (Nyariaro, 2017; Demartini et al., 2018; Lodorfos et al., 2018 and Bor, 2021).

Green Purchasing is the initial step in the value chain as it is positioned at the onset of the upstream flow of materials within the confines of an organization, thus the first dimension in this study (Çankaya & Sezen, 2019). Green Purchasing relates to the upstream preference of green products, achieved by selecting environmental conscious suppliers, and Supplier Collaboration to attain environmental justice hence organizational performance. Therefore, Green Product Preference, Supplier Selection and Supplier Collaboration were adopted as indicators of Green Purchasing practices in the study. Reviewed studies on Green Purchasing have been conducted in different industry sectors (Anane, 2020 in Ghana Water Company

Limited and Bayport Savings and Loans PLC; Ghosh, 2019 in various Indian Manufacturing firms; Islam et al., 2017 in both public and private sector organizations across various fields) ignoring soft drinks firms. The current study sought to bridge this by focusing on Soft Drinks Manufacturing sector.

Green Packaging is the utilization of packaging that has a low negative environmental footprint. For a package to be considered green, it should adapt to the different needs of logistics and supply chain. Maziriri (2020) indicates that it should be designed for the environment (reduce, reuse and recycle), Song et al. (2019) further asserts that it should have an eco-label. Deriving from the aforementioned, Eco-Design, Eco-Labeling and Packaging Integration with Logistics and Supply Chain Management (LSCM) were chosen as indicators of Green Packaging practices in the current study. The reviewed literature (Zailani et al., 2015; Owusu-Bio et al., 2016; Sambu, 2016; Musalia, 2018; Kozik, 2020 & Maziriri, 2020), have been carried out in the backdrop of the Soft Drinks manufacturing sector, specifically in Africa. Hence, the current study examined Green Packaging and performance in SDMFs in Kenya.

Green Distribution as a cardinal activity that impacts the performance of a green supply chain incorporates all pursuits to obliterate environmental injustices during shipment (Lu et al., 2019). Environmentally Responsible Fleet Management will be recognized as a valid Green Distribution practice in the current study alongside with Eco-Distribution Management and Eco-Network Design as supported by Ratnajeewa & Bandara (2015) in their Green Logistics Distribution practices research review. Although research has been done on Green Distribution practices and performance, none of the reviewed studies (Hutomo et al., 2018; Kirunga & Kihara, 2018; Anucha, 2019; Dare et al., 2019; Lu et al., 2019; Yusuf, 2020) focused on the Soft Drinks manufacturing sector, activating need of current study to focus on SDMFs

In the words of Voigt et al. (2019), Environmentally-Oriented Reverse Logistics (EORL) refers to all operations related to plotting, executing, and controlling the methodical, cost

effective movement of raw materials, work-in-progress inventory, finished goods and related information from the point of consumption to the point of origin in order to retrieve or create value or proper disposal. Ebenezer & Zhuo (2019) noted that Reverse Logistics proffers amongst the most regular Reverse Logistics prodded facet of GSCM practices. EORL Innovation, Product Recovery and Re-manufacture will be considered as the EORL practices as proposed by Huang & Yang (2013) and Meyer et al. (2017). The chunk of EORL and organizational performance literature has advanced over the last decennary (Mandota, 2015; Matoke & Atambo, 2016; Meyer et al., 2017; Alnoor et al., 2019; Mbovu & Mburu, 2018; Yu et al., 2018; Ebenezer & Zhuo, 2019 and Bor, 2020). However, these works are plausibly preliminary, and some inquests are still yet to be addressed. For instance, reviewed studies were based on quantitative methodology. This study filled the methodological gap, which was not addressed in reviewed studies and used both qualitative and quantitative methodologies.

1.1.2 Soft Drinks Manufacturing Firms in Kenya

The memoir of Soft Drinks Manufacturing stems from 1931 when Kenya Ice and Aerated Water Factory were established in Kenya. The 1940s saw the local Soft Drinks industry encompassed of a large number of small-scale producers (KAM, 2019). Soft Drinks in East Africa (2020) report confirms that Multinational Corporations (MNCs) augmented their importation endeavors after 1945; thereafter it was followed by Foreign Direct Investment (FDI) by some MNCs. Symptoms of this FDI was that a number of MNCs situated their production facilities in the country and foreign firms took over local firms or initiated joint ventures or franchise arrangements with local firms. The Kenyan market structure has the characteristics of an oligopoly; few dominant market players. The major players in the Kenyan market are private firms which are fully locally owned (20%), fully international firms (15%), joint locally and internationally owned (65%) adopting green practices (Euromonitor International, 2021; Wood et al., 2021). They include: Coca-Cola, Delmonte Kenya, Aquamist Limited, Kuguru Food Complex Limited, Keringet mineral water, Milly Fruit Processors Limited, Bidco Africa limited, Excel Chemicals, Suntory, Kevian Kenya

Limited and Sky Foods Limited (Euromonitor International, 2021). According to Lars (2022), as of 2020, Coca-Cola had dominated the Market Share of Soft Drinks in Kenya, around 70%. Home grown SDMFs Kevian and Excel Chemicals accounted for 5% and 2% respectively of the Market Shares. Suntory and Delmonte followed at 1% each. The rest of the Soft Drinks Manufacturing Firms shared the remaining 19% Market Share.

Euromonitor International (2021) classifies the international Soft Drinks market into the following Soft Drinks markets: carbonated Soft Drinks, juice, concentrates, sports drinks, energy drinks, ready to drink tea, ready to drink coffee, bottled water, and Asian specialty drinks. In 2020, the sales revenue of the international Soft Drinks market was \$772.5 billion. From 2006 to 2020, the international Soft Drinks market rose in size by 88%. Coca-Cola Company (20.8%) and PepsiCo (10.0%) held the largest Market Shares in 2020 in the international Soft Drinks market by a considerable margin. Their Market Share if combined was larger than the combined Market Share of the remaining SDMFs (Wood et al., 2021). Euromonitor International (2021) noted that the Soft Drinks segment in Kenya amounted to \$2.97 billion in 2020. Until 2026, the Soft Drinks market in Kenya is expected to grow annually by 12.83% (CAGR 2022-2026). This is a decrease, compared to the growth of about 17.44% per year, registered in 2016-2021 (KNBS, 2021). In global comparison, most revenue is generated in the United States (USD 318.50 billion in 2022). These statistics are evident of the huge impact that this industry has on both the world and the local Kenyan economy.

Kenya's manufacturing output, which encompasses the Soft Drinks sector for 2021 was USD 7.99B, a decrease from 9.3% in 2016 to 7.2% in 2021 (KNBS, 2022). This report further shows that in 2021, the manufacturing sector was about 17.30% of the total Gross Domestic Product (GDP) and the government of Kenya plans to increase this contribution to 20% by 2030, implying that tax revenue from the sector can triple if 20% GDP contribution is achieved by 2030 (KNBS, 2022). This is likely to escalate pollution levels even further. However much the industry contribution to the Kenyan economy cannot be overlooked; the manufacturing sector is a prime source of environmental deterioration

(Islaim et al., 2019). Without action, the general costs of climate change will be equal to losing at the minimum 5% of global GDP annually, the benefits of solid, quick fix surpass the costs of not acting.

Data by the KNBS (2021) shows that production of Soft Drinks in Kenya dropped by 80.4 million litres in 2020. The country's leading beverage maker Coca-Cola, recorded a 13% drop in net operating revenue to post Ksh3.5 billion (USD 32.5m) in 2020, down from Ksh3.9 billion (USD 36.3m) in 2019. Variable costs (raw materials, transportation and delivery, and packaging) and fixed costs (rent, salaries, advertisements, equipment, insurance) of SDMFs have increased and this has affected the companies' output to a great extent (Euromonitor International, 2020). The expenditures on raw materials are highly dependable on weather and climate and with the changes in climatic conditions; there is a sharp rise in price of agricultural produce like sugar and fruits (Euromonitor International, 2020). The materials used for bottling the product constitute a large part of cost allocation. Finally, transportation and delivery costs depend on the supply chain and fuel prices whose prices are so high. Hence, SDMFs need to come up with the most energy-saving and environmentally friendly solutions to bottle its drinks so as to cut on costs (Euromonitor International. (2021).

The focus on SDMFs in this study is backed by empirical support (Demartini et al., 2018; Lodorfos et al., 2018; Nyariaro, 2017 and Bor, 2021) which presents these firms as the prime route for investigating the crucial GSCM practices for attaining environmentally sustainable goals and hence organizational performance. The food and beverage industry where SDMFs are included accounts for the highest share of value-added in manufacturing (KNBS, 2021). World over, the role played by SDMFs towards economic growth and development cannot be overemphasized, implying that the sector's expected future growth (annual growth rate of 12.83%) may risk compounding pollution and environmental degradation (KNBS, 2021).

1.1.3 Global Perspective of Green Supply Chain Management practices

Developed countries have higher stakeholder environmental recognition thus are exposed to a higher degree of pressures compared to organizations in developing countries. Therefore,

organizations in these countries tend to have a more proactive approach towards the environment, they implement various GSCM practices even beyond the regulatory requirements (Abdellatif & Graham, 2019). Globally, the EU and its Member States are front-runners in environmental policy, and the European Green Deal demonstrates the EU ambitions in the fields of climate, circular economy, biodiversity, agriculture, industry and zero-pollution (UNEP, 2022). As a proponent of international environmental governance, the EU has also been very supportive in strengthening UNEP's role as "the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations," since the Rio+20 Conference on Sustainable Development in 2012 thus contributing to Sustainable Development Goal 12 on Sustainable Consumption and Production and Goal 13 on Combatting Climate Change (UNEP, 2022).

Green Purchasing has emerged as an important component of environmental and supply chain strategies for a number of companies globally to realize performance. For example, IBM, Ford, GM, and Toyota require their suppliers to develop environmental management systems (EMS) consistent with International Organization for Standardization (ISO) 14001 certification (Ford Integrated Sustainability and Financial Report, 2021; GM Sustainability Report, 2021; IBM, 2021; Toyota Environment Report, 2021). As a steward of the environment, Toyota established the 7th Environmental Action Plan that includes the Green Supplier Requirements, a new set of criteria for suppliers to commit to an annual carbon reduction of at least 2%, in addition to other environmental initiatives that focus on carbon, water, materials and biodiversity (Toyota Environment Report, 2021).

In 2016, Taiwan Semiconductor Manufacturing Company (TSMC) formally incorporated the Green Product Mark into its Information Technology products purchasing specification. As of 2020, TSMC was recognized for the Excellent Performance in Green Purchasing Award from Taiwan's Environmental Protection Administration of the Executive Yuan for nine consecutive years. TSMC spends up to 2% of annual revenue on environmental, social and governance initiatives as part of its plan to reach net-zero emissions by 2050. Apple and

Facebook, both clients of TSMC, have pledged to reach carbon neutrality by 2030, while Microsoft said it will be carbon-negative from 2030. This push by the American tech giants is forcing tens of thousands of their suppliers to step up decarbonization efforts or risk losing business (TSMC, 2021).

According to Arthur (2020), Coca-Cola, Danone, Keurig Dr Pepper and PepsiCo commit to design and make 100% of packaging to be recyclable or reusable, compostable or biodegradable by 2025; Nestle aims to make 100% of packaging to be recyclable or reusable by 2025 and 84.5% of their total packaging was recyclable or reusable by 2021; The Drinks Industry Sustainability Index – Trends Report (2020) noted that as part of its commitment to eliminate plastic waste from sporting events, Lucozade Ribena Suntory teamed up with sustainable packaging start-up Notpla to produce an innovative packaging solution (edible sea-weed packaging that naturally bio-degrades in four to six weeks) called Oohos that will eliminate packaging and also drastically reduce the use of energy and water (The Drinks Industry Sustainability Index – Trends Report, 2020). All the above initiatives have proven to improve organizational performance.

According to Toyota (2022), the automaker is using a sustainable distribution solution from DB Cargo UK and French company Groupe CAT, Europe's leading vehicle logistics provider. They have launched a joint service for Toyota Motor Europe to transport cars from Toton in the East Midlands to Valenciennes in northern France. This was preceded by the construction of a new transshipment terminal at the Toton site by DB Cargo UK and the Purchasing of a new fleet of special wagons by STVA, Groupe CAT's British subsidiary. On the outward run, the new generations of Corolla Hybrids produced at Toyota's Burnaston plant are exported to France. On the way back, cars like the Toyota Aygo, the Yaris and the new Yaris are imported from the Czech Republic and France to the UK to ensure the route is fully utilized (Toyota, 2022). Coca-Cola Euro-pacific Partners Deutschland GmbH (CCEP Deutschland GmbH) the largest beverage producer in Germany started shifting transportation from road to rail at a very early stage. To go even further in its efforts to reduce CO₂ emissions, Coca-Cola intends to replace its entire fleet of 2,300 company and

commercial vehicles with electric-only vehicles as leasing agreements end, and it wants to complete this changeover by 2025 (DB, 2021).

Globally, SDMFs have a technical coalition with Beverage Industry Environmental Roundtable (BIER) founded in 2006 of leading global beverage companies working together to advance environmental sustainability within the beverage sector and inform public policy through engagement with key stakeholders and work focused on business-relevant environmental dimensions including water, energy & climate, beverage container recycling, sustainable agriculture, and eco-system services so as to improve performance of SDMFs (BIER, 2021).

1.1.4 Regional perspective of Green Supply Chain Management practices

Regionally, GSCM is not well-established and developing countries more often struggle with the implementation of new strategies, especially with sustainable activities (Govindan et al., 2020) due to limited resources, limited environmental regulations, governmental commitment towards environment, and public awareness and this can explain why many organizations in developing countries are still having a reactive approach towards the environment and of more concern, monitoring and control of pollution is not taken seriously (Abdellatif & Graham, 2019).

South Africa's case is however unique as Ojo et al. (2019) eludes that there are many examples of South African companies effectively 'greening' the supply chain and thus optimize organization's performance as per the annual Green Supply Chain Awards-a joint initiative between the Chartered Institute of Logistics and Transport South Africa (CILTSA), the Consumer Goods Council of South Africa (CGCSA) and Supply Chain Today magazine (Malingaka et al., 2020). The award winners show that South African supply chains are leading the way: from Rainbow Farms who converted incandescent lighting in 36 facilities to LED systems, reducing electricity consumption by 117 000 kWh per month, to TFD Network Africa who launched 'Driving the Green Movement', a project that addresses energy efficiency, water management, waste management and carbon emission reduction.

Baroword Logistics, Ellerrine Holdings and Growthpoint Properties together used green building technologies to convert a disused foundry into a state-of-the-art warehouse for Green Distribution, earning a 'Highly Commended' mention. South African products also shine, with ECO₂Fleet (a web-based reporting service, developed by Standard Bank that measures the carbon footprint of a vehicle fleet to reduce costs) and to DHL (with their aerodynamic teardrop trailer that reduces wind resistance at speed) both winners in the 'Best Product' category (Ojo et al., 2019).

According to Joweria (2018), majority of organizations in West and Central African countries like; Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Cameroon, Central African Republic (CAR), Chad, Comoros, Democratic Republic of the Congo, Cote d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Gabon, Gambia, Ghana, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali are striving to achieve environmental sustainability and improving organizational performance through portraying the environmentally friendly image of products, processes, systems and technologies.

Tanzania's GSCM practices uptake in the manufacturing sector is at a rudimentary stage and worse still it's currently promoting the development of industry and exploitation of natural resources in an attempt to improve its economic stability (Silver, 2019). Tanzania lacks the economic base, trained manpower, a conceptual framework, stakeholder support, governmental motivation, legislation and regulatory infrastructure essential for the implementation of a regulatory and corrective strategy for effective environmental management (Tumaini, 2021). The five "dirtiest" sectors which lead in the overall pollution in Tanzania include basic iron and steel; plastics products; basic chemicals; vegetable and animal oils and fats; not forgetting cement, lime and plaster (Silver, 2019). Remarkably, the government of Tanzania banned the production and use of plastic bags effective June 1st 2019 with the aim of conserving the environment (URT, 2019). On the other hand, Dar es Salaam is reported to be the leading producer of industrial pollution accounting for about 88% of all industrial pollution in Tanzania, reflecting the high concentration of industries that are located in the area (Amon & Hafidh, 2018). The world's giant Soft Drinks

manufacturer Coca-Cola Kwanza implemented an initiative to clean up river Mlalakua polluted by plastic waste (Kushner, 2019). This move has since been met by mixed reactions by the locals as they are of the view that Coca-Cola Kwanza has already redoubled its efforts to keep plastic in production instead of phasing out single-use plastics and distract customers with more cleanup efforts that are not sustainable (Wheeler, 2020).

Rwanda has been ranked among the top ten fastest growing countries in the world economically and one of the cleanest countries globally (Nimpano et al., 2021). Compared to other African countries, Rwandan firms are relatively young (Rwanda Development Board, 2020). Around 80% of existing firms were created between 2006 and 2011 and a further 17% between 1995 and 2005. In total, the industrial sector accounts for 4,752 firms of which 97% are manufacturing firms (Rwanda Development Board, 2020). Its manufacturing sector has witnessed significant progress with both small-and-large-scale manufacturing dominated by resource-based products with the beverage sub-sector being the largest agri-business sector with revenues exceeding 150 million USD in 2020. Between 2016 and 2020, manufacturing contribution to GDP stood at an average of 9.44% (Rwanda Development Board, 2020). Such growth comes with increased environmental degradation but Rwanda has managed to minimize it through a baseline established in 2005 that guides the development of green economy in Rwanda with the country having to make changes to its strategies while maintaining the focus on its long-term sustainability goals. Rwanda's current position about green initiatives for Agri-manufacturing firms makes it a great example of sustainable development and growth in the continent (Rwanda Development Board, 2020). Rwanda's mission to maintain a clean and healthy environment has been going since 2008 when it banned the use of non-biodegradable plastic bags and packaging materials. To ensure sustainable energy sources, Kitabi Tea Factory dedicated 45% of its land to eucalyptus plantations that are available for exploitation (Nimpano et al, 2021). In 2017 Bralirwa Ltd continued to reduce its climate impact throughout the value chain, bringing several sustainability initiatives under one goal to reduce its carbon footprint, 5% decrease in average water consumption in brewery in 2021 compared to 2020; 16% cut in CO₂ emissions compared to 2020, all these changes are due to the Green Supply Chain

initiatives. In 2020, Bralirwa Limited's overall financial performance improved substantially compared to 2019 despite the challenging business environment due to Covid-19 (Bralirwa, 2021).

1.1.5 Local perspective of Green Supply Chain Management practices

Environment management and planning in Kenya can be traced to the Rio Earth Summit of 1992, which helped a great deal in raising understanding about the link between environment and development (UNEP, 2019). Following the summit, Kenya initiated the National Environmental Action Plan (NEAP) process. This was completed in 1994. It recommended the need for a national policy and law on the natural environment (RoK, 2019). The policy process culminated into the Draft Sessional Paper No. 6 of 1999 entitled —Environment and Development. The legislative process gave forth the Environment Management and Coordination Act (EMCA) No. 8 of 1999 as Kenya 's first framework of environmental law (RoK, 2019) for addressing environmental challenges such as environmentally-related diseases, water and air pollution, waste management, climate change just to mention but a few. Environmental considerations of development are contained within the social and economic pillars. Kenya is a member of the Convention of Biological Diversity (CBD), one of the outcomes of the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 (UNEP, 2019). Kenya has also been implementing other international development treaties like Agenda 21 and the MDGs that are inclined to environment protection and sustainable development.

In a bid to protect the environment, the Kenyan Government has also put in place a wide range of policy, institutional, regulatory and legislative frameworks to address the major causes of environmental degradation and negative impacts on ecosystems emanating from industrial and economic development programmes (Achuora, 2018b). The National Environment Management Authority (NEMA), handles environmental coordination in Kenya (RoK, 2020). The constitution of Kenya, 2010, hailed as a green constitution, embodies elaborate provisions on matters related to the management of the environment and

the sustainable use of resources (Achuora, 2020). Article 69(2) of the constitution of Kenya, 2010, states that every Kenyan has a duty to cooperate with the authorities in the protection and conservation of the environment and ensuring ecologically sustainable development as well as use of resources. Chapter five of the constitution is entirely dedicated to land and the environment. Article 69(1) has obligated the government to ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources. Articles 185 (2) and 186 (1) as well as article 187 (2) of the constitution have distributed functions for protecting the environment between the national government and the county governments (Achuora, 2018b). The Constitution of Kenya, 2010 envisioned a green economy where all the players in the economic development of the country are expected to undertake their economic activities in a manner that minimizes the impact on the natural environment (RoK, 2020). It established a framework of natural environment management throughout the entire supply chain- Green Supply Chain Management. This is in line with sustainable development objective of Vision 2030; Kenya road map for development (RoK, 2018).

There are several other government agencies that play a role as they manage their sectors. These include: Ministry of public health and sanitation-environmental health including; Public Health, the working environment radiation control and management of hazardous wastes; Ministry of water development-through management of water resources utilization; Ministry of Local government-through management of urban environments by urban councils; Ministry of forestry and wild life-anti poaching and deforestation; and Ministry of Agriculture-Controls farming practices to prevent soil erosion in areas with sloppy land

Majority of reviewed studies on GSCM practices and firm performance have been conducted in other sectors of the economy (Odock, 2016: Certified Manufacturing Firms in East Africa; Achuora, 2018a, Manufacturing Firms in Kenya; Omusebe, 2018: Energy and Petroleum State Corporations in Kenya; Muthangya & Chege, 2021: Building, Mining and Construction firms in Kenya, Nyachomba & Achuora, 2022: Gas Manufacturing Firms in Kenya) overlooking the Soft Drinks sector. Even for those that conducted research in this

sector (Mwaura et al., 2016; Nderitu, 2016; Onyinkwa and Ochiri, 2016; Nyariaro, 2017; Bor, 2021) considered to carry out research on sampled SDMFs in Nairobi County ignoring the fact that regional and firm differences in terms of implementation of environmental practices can make findings not to be generalized. In addition, studies on GSCM practices and performance (e.g. Omariba, 2018; Çankaya & Sezen, 2019; Nguyen et al., 2020; Bor, 2021 and Nguyen et al. 2022) were based on only quantitative methodology, ignoring the realism of a mixed approach. Furthermore, none of these studies utilized a moderating variable. For these main reasons, the research focused on all the SDMFs in Kenya by focusing on Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics as the GSCM Practices with the moderating role of Stakeholder Pressure on the relationship between GSCM practices and performance. This study represents one of the first empirical works that explores all the SDMFs in Kenya thus bridges a critical literature gap identified by Çankaya & Sezen, (2019), who claimed that the relationship between GSCM practices and performance is much less studied in some manufacturing sectors of developing countries and also responds to calls by Ahmed (2021) who highly recommended for future research to be conducted with a larger sample size, incorporating large, small and medium-sized companies.

The stakeholder theory establishes that pressure from a range of stakeholder groups is an important motivation for the implementation of various environmental strategies and practices. These pressures can be categorized as coercive and non-coercive (mimetic or normative pressures) within the external environment and they are normally targeted at a group of companies within a particular industry as opposed to an individual company. The main stakeholder source of coercive pressures is regulators, but pressure may also derive from powerful firms within the industry who exert a degree of political influence or other external stakeholders such as customers and competitors. Therefore, regulators customers and competitors are fundamental stakeholders for a firm that may imply pressure for results.

Scholarly works on Stakeholder Pressure is not seldom. A glut of studies reviewed on the variable were quantitative (e.g. Rafiq et al., 2019; Graham, 2020 and Mousavi, 2020),

ignoring the mixed method approach. Additionally, the aforementioned reviewed studies were multi-faceted and did not concentrate on a specific industry. In the same vein, numerous reviewed studies on GSCM practices and organizational performance showed negligence in moderating this relationship (e.g. Omariba, 2018; Çankaya & Sezen, 2019; Nguyen et al., 2020; Bor, 2021 and Nguyen et al. 2022). Notwithstanding, studies on moderation on this relationship albeit operationalized stakeholder pressure diversely (e.g. Achuora, 2018a, supply chain ecocentricity; Cousins et al., 2019, supply chain ecocentricity and traceability; and Rutere, 2022, collaborative capability) ignoring important stakeholder antecedents such as customer pressure, regulatory pressure and the competitive pressure. For this, the current study sought to evaluate the moderating role of stakeholder pressure on the relationship between GSCM practices and performance of SDMFs in Kenya.

According to the Natural Resource Based View (NRBV) theory, GSCM practices (Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics) translate into a firm's strategic resources that allow a more systematic examination of the relationship between environmental and financial performance by specifying the link between resources and capabilities and strategic outcomes. In particular, the NRBV's emphasis on the contingent nature of resources and capabilities has aided researchers in making specific links between environmental and financial performance. Thus, the study adopted NRBV theory as the main anchor lens, grounding that GSCM practices and stakeholder pressure are natural resources in their own set up that firms such as SDMFs may adopt to improve their results as raising profitability levels, improving market shares and reducing costs of operations.

This research presented five main contributions. First, this study identified the dominant GSCM practices that were most effective in terms of performance of SDMFs as suggested by Demartini et al. (2018). Yassine (2022) stressed the importance of the identification of dominant GSCM practices eluding that adopting all the practices is a difficult task and there is no one size fit GSCM practices that can be adopted by all manufacturing firms. Second, the study sought to understand why performance outcomes might vary across different

implementations of GSCM practices thus an important complement to other recent studies conducted in other countries such as the USA (Qorri et al., 2018), Turkey (Çankaya & Sezen, 2019), Pakistan (Ahmad et al., 2022) and India (Khan & Pasha, 2021). Third, the study considered the moderating effect of key stakeholders in the Soft Drinks manufacturing sector. This was in response to the call of Hashmi & Akram (2021) and Haleem et al. (2022) for identification of the key stakeholders for specific sectors and complements the study of Khan and Pasha (2021) who identified government regulations, customers and competitors as key stakeholders that force and influence organizations to adopt GSCM practices and in turn improve performance. Fourth, the study will test the proposed model from Soft Drinks Manufacturing firms' perspective in a developing country. In doing so, this study attempted to bridge a literature gap identified by Çankaya & Sezen, (2019), who claimed that the relationship between GSCM practices and performance is much less studied in some manufacturing sectors of developing countries. They suggest more such studies in less explored manufacturing sectors of developing countries in Africa. This study represented the first empirical work that explored all the Soft Drinks Manufacturing Firms in the entire of Kenya. Lastly, this study will utilize both quantitative and qualitative methodologies. Thus, it is against this background that the researcher extended previous research and investigated the effect of Green Supply Chain Management practices and the performance of Soft Drinks Manufacturing Firms in Kenya with the moderating role of stakeholder pressure.

1.2 Statement of the Problem

SDMFs are fundamental to growth of the economy. Globally, the Euromonitor International report 2021, show that SDMFs posted \$772.5 billion in revenues, rising in market base by 88% up to 2020 with the leading country, USA contributing \$318.50 billion to GDP in 2022. In Kenya, it is reported that SDMFs contributed \$2.97 billion to GDP in 2020 with the manufacturing sector making up 17.3% of the country's GDP and expected to grow by 12.83% between 2022-2026. However, a scenario of poor practices and policies birthed in ensuing stakeholder demands and global shocks such as Covid 19 has resulted in reduced

market shares, low profit levels and increase in costs of operations. KNBS report, 2022 shows that Kenya's manufacturing output, which encompasses the soft drinks sector in 2021 was \$ 7.99 billion, a decrease from 9.3% in 2016 to 7.2% in 2021. The report also indicates that production by SDMFs in Kenya dropped by 80.4 million liters in 2020 with the leading beverages maker, Coca Cola plc. recording a 13% drop in net revenues to post \$32.5 million. Variable costs made up of raw materials, transportation, packaging and fixed costs encompassing rent and rates, salaries and wages, advertisement, equipment and insurance have increased, affecting the firms' output levels. Euromonitor International report, 2021 and previous scholarly works have attuned this hugely to poor policies and practices such as GSCM, cemented in ensuing stakeholder rights. Empirical evidences on GSCM practices focused on other sectors of the economy and did not consider important practices such as green purchasing, packaging, distribution and environmentally oriented reverse logistics in all SDMFs. Reviewed works on stakeholder pressure were quantitative and multi-faceted, did not consider specific industry sector. Some reviewed studies show weak relationship between GSCM practices and performance, implying moderation effects may abound. Practically, GSCM practices, Stakeholder Pressure and performance exist together. However, Stakeholder Pressure as a moderator on this model is nonexistent. The current study sought to investigate the moderating role of Stakeholder Pressure on the relationship between GSCM practices and performance of SDMFs in Kenya.

1.3 Objectives of the study

The general objective of the study was to investigate the moderating role of stakeholder pressure on the relationship between Green Supply Chain Management practices and performance of Soft Drinks Manufacturing Firms in Kenya. The study was guided by the following five specific objectives;

- i. To ascertain the effect of Green Purchasing on performance of Soft Drinks Manufacturing Firms in Kenya

- ii. To assess the effect of Green Packaging on performance of Soft Drinks Manufacturing Firms in Kenya
- iii. To establish the effect of Green Distribution on performance of Soft Drinks Manufacturing Firms in Kenya
- iv. To determine the effect of Environmentally-Oriented Reverse Logistics on performance of Soft Drinks Manufacturing Firms in Kenya
- v. To determine the moderating role of stakeholder pressure on the relationship between Green Supply Chain Management practices and performance of Soft Drinks Manufacturing Firms in Kenya

1.4 Research Hypotheses

H₀₁: Green Purchasing has no significant relationship with performance of Soft Drinks Manufacturing Firms in Kenya

H₀₂: Green Packaging has no significant relationship with performance of Soft Drinks Manufacturing Firms in Kenya

H₀₃: Green Distribution has no significant relationship with performance of Soft Drinks Manufacturing Firms in Kenya

H₀₄: Environmentally-Oriented Reverse Logistics has no significant relationship with performance of Soft Drinks Manufacturing Firms in Kenya

H₀₅: Stakeholder Pressure has no significant moderating role on the relationship between Green Supply Chain Management practices and performance of Soft Drinks Manufacturing Firms in Kenya

1.5 Significance of the Study

Soft Drinks manufacturing industry members may find the results of the study important as input for GSCM practices strategy formulation and implementation as well as stakeholder involvement. Manufacturing firms may be given a clear proof of whether or not it pays to be green. The implementation of GSCM practices may enable manufacturers to bear Stakeholder Pressure thus enhance economic performance. The study may inform the government on how to address gaps that prevail in law by taking the initiative to ensure environmental regulations are more stringent so as to promote environmental sustainability. Prospective investors in the Soft Drinks manufacturing industry may use results of the study to gauge the attractiveness of the industry and the Stakeholder Pressures that need to be considered in order to efficiently implement GSCM practices. In academia, the current study may furnish the body of literature by addressing GSCM practices and organizational performance direct relationship, in the context of a developing economy; examining the role of Stakeholder Pressure on this relationship and to what extent such practices lead to performance of SDMFs. Furthermore, it may open the new horizons for the upcoming researchers to think about organizational performance in a new perspective.

1.6 Assumptions of the study

The study assumed that the variables under study would not change in the entire period of study. It was also assumed that the time allocated for the study was sufficient enough for the study to be completed. Furthermore, it was expected that the responses given by the participants were true facts and the findings were generalized to the entire population. In addition, the individuals selected for the study were deemed to be information rich. The study assumed that the face to face interview was to be conducted after data has been collected through on-line questionnaire with intentions of refining data collection efforts and triangulating the data obtained from on-line questionnaire. It was also assumed that how a theme was defined was to be constant throughout the study, and that on this basis occurrence of themes were enumerated in a straight forward manner. An assumption was also made that the Soft Drinks Manufacturing sub-sector was under pressure by environmental regulators,

customers and competitors to implement GSCM Practices. This was to imply that the study assumed that all the SDMFs were practicing GSCM practices, hence they were all targeted.

1.7 Scope of the study

The study examined the moderating role of stakeholder pressure on the relationship between GSCM practices and performance of Soft Drinks Manufacturing Firms in Kenya. GSCM practices were investigated in three dimensions: inbound dimension (Green Purchasing); outbound dimension (Green Packaging and Green Distribution); and reverse dimension (Environmentally-Oriented Reverse Logistics). These four measures of GSCM practices captured key dimensions of operational practices in Soft Drinks Manufacturing firms. The effect of Stakeholder Pressure as a moderating factor on the relationship between GSCM practices and performance of SDMFs was tested. Stakeholder pressure was defined in this study to include coercive pressure (regulatory pressure), mimetic pressure (competitive pressure) and normative pressure (customer pressure). Firm performance was measured through Profitability, Cost Efficiency and Market Share performance. The population of the study comprised all companies manufacturing Soft Drinks products in Kenya and registered by Kenya Association of Manufacturers (KAM). KAM report (2022) indicates that there are 92 SDMFs in Kenya located in Kiambu, Kisii, Kisumu, Machakos, Mombasa, Nairobi, Nakuru, Nyeri and Uasin Gishu counties. The study was limited to the Soft Drinks manufacturing industry because of the huge impact that this sector has on the economy that may risk compounding pollution and environmental degradation. Mainly grounded in Natural Resource Based View Theory, the study employed a mixed methods survey design on a population of 460 managers and 92 CEOs, utilizing both quantitative and qualitative data. Field work in the study was carried out between September, 2022 and January, 2023.

1.8 Limitations of the Study

Notwithstanding the immense contributions to the body of the knowledge on GSCM practices and firm's performance, it is paramount to evaluate the results in the context of the study limitations. First, the choice of survey design as the preferred methodological choice

for the study has a profound effect especially on the measurement problems. Mixed methods survey data design imply that conclusions are generally limited by virtue of being collected at one point in time and do not give the sequence of events thereafter. However still studies based on cross-sectional data tend to provide information for subsequent studies in the same areas of interest.

The second limitation relates to the fact that the current study focused on Soft Drinks Manufacturing Firms. The reason for choosing SDMFs is that they account for a part of the environmental impact. The study was also limited to SDMFs in Kenya because the research by choice aims to gain an understanding of the behavior of firms in a specific industry towards environmental protection. Concerns have been raised as to whether a single industry focus was enough to make results of the study more generalizable to other industries. However, the focus of such a study conferred the obvious advantage of control for industry effects.

Third limitation was concerning collection of data through questionnaires administered to internal respondents who are employees of these facilities. This may give respondents an opportunity to be biased and give responses which are not a true reflection of true practices. Thus, the main purpose maybe to cushion the facility from defamation or to give the firms unmerited publicity. However, the purpose of the study which was purely academic was explicitly explained to the respondents to avoid any suspicion or biasness.

1.9 Operational definition of terms

Environmentally-Oriented Reverse Logistics: The process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing or creating value or proper disposal

Green Distribution: Incorporates all activities to diminish/obliterate environmental damages and wastes during shipment

Green Packaging: The use of packaging that has a low negative impact on the environment.

Green Purchasing: The purchase of products that are designed with environmental objectives and impact in mind

Green Supply Chain Management practices: The intra- and inter-firm management of the upstream and downstream supply chain practices aimed at minimizing the overall environmental impact of both the forward and reverse flows

Performance: The total value created by the firm through its activities, which is the sum of the utility created for each of a firm's legitimate stakeholders

Soft Drinks: Any of a class of non-alcoholic beverages usually but not necessarily carbonated, normally containing a natural or artificial sweetening agent, edible acids, natural or artificial flavors, juices and water

Stakeholder pressures: Power and ability of stakeholders to affect organizational decisions

Stakeholder: A group or individual who can affect or is affected by the achievement of an organization's objectives due to adoption key strategies, policies or practices

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section deals with reviewed literature on the effect of GSCM practices on performance of Soft Drinks Manufacturing Firms. It provides a theoretical anchorage of the study and empirical grounding for the problem under investigation. The theoretical literature relating to Green Supply Chain Management practices, stakeholder pressure and firm performance was reviewed based on a bull's eye approach. This was followed by a consideration of the dimensions of firm profitability, Cost Efficiency and Market Share performance. A conceptual model was formulated from the theoretical review and empirical literature was reviewed on different aspects of the study.

2.2 Theoretical Literature Review

2.2.1 Natural Resource-Based View theory

The Natural Resource-Based View (NRBV), advanced by Hart (1995), surfaced from the development of the Resource-Based View (RBV) theory (Cousins et al., 2019) which offers a theoretical framework that spells out how a firm can organize its valuable, unique and inimitable resources to attain a sustainable competitive advantage. Undoubtedly, it is the unique nature of a firm's strategic resources that cushions the firm from competition. Hart (1995) nevertheless, alleges that RBV theory lays more emphasis on internal resources ignoring the role of the natural environment. Apart from considering the available resources, firms should as well as consider in what ways these resources "fit" with the external "natural" environment. It is this "fit" that internal and external shortcomings can be bridged within RBV theory, and hence Hart (1995) proposes NRBV to enhance understanding of this fit between a firm and its natural environment.

The NRBV pinpoints that sustainable practices are resources that competitors cannot easily imitate or acquire because of institutional or capability constraints and hence may be considered "strategic resources" from an RBV perspective. NRBV asks for a focus on the natural environment, contending that firms are restrained not only by their internal resources,

but also by the availability and cost of external environmental resources. NRBV identified three key inter-related environmental strategic capabilities; “pollution prevention” (minimizing environmental degradation through reducing inputs required, simplifying the process and reducing compliance and liability costs), “product stewardship” (expanding the scope of pollution prevention to include the entire value chain or “life cycle” of the firm’s product systems).

Through stakeholder engagement, the “voice of the environment” can be effectively integrated into the product redesign and development process) and “sustainable development” (producing in a way that can be maintained indefinitely into the future, as well as, focusing on economic and social concerns). These three “natural environment” strategies confirmed to be a source of competitive edge and performance improvement within the confines of RBV. Essentially, GSCM practices alongside with moderating role of Stakeholder Pressure are regarded essential in carrying out the three natural environment strategic capabilities; as these resources are valuable and non-substitutable, and the GSCM practices are specific to SDMFs due to their exclusive supply arrangement and finally these resources are difficult to replicate as they are skill-based and people-intensive.

The NRBV approach focuses on the valuable resources of the organization, which in turn, impacts long-term survival. Green Packaging practice is a firm’s unique causally ambiguous resource. This practice is people based and depends on tacit skills that are developed by involving employees in the pursuit of the environmental objective (Maziriri, 2020). The decentralized and tacit nature of this competence makes it hard to observe in practice and, hence, difficult to imitate quickly (Barney, 2018). Consequently, the firm is afforded the opportunity for sustained competitive advantage through a unique causally ambiguous resource. Green procurement, Green Distribution and Environmentally-Oriented Reverse Logistics create socially complex resources since these activities depend upon a large network of people or teams engaged in coordinated action which few individuals, if any, have sufficient breadth of knowledge to execute (Hutomo et al., 2018). Stakeholders are an important resource to firm’s performance given that their pressure unequivocally improves

the effect of adopting GSCM practices on performance. In this regard, both GSCM practices and stakeholders are frugal resources that may be leveraged by a firm to alleviate negative environmental outcomes. The NRBV theory expounds that firms may utilize their available resources (in this case GSCM practices and stakeholders) to improve their outcomes. The motive behind GSCM is to improve supply chain competitiveness while considering the availability and cost of external environmental resources in order to create value for firms through enhanced Cost Efficiency, Profitability and Market Share.

NRBV theory often used to explain more strategic motivations of GSCM adoption, such as why firms operating within the same context (market or industry) pursue different GSCM strategies despite experiencing similar institutional pressures (Rutere, 2020). Maziriri (2020) used the theory in examining Green Packaging and Green Advertising as the precursor of competitive advantage in small and medium enterprises of South African economy. Utomo, Saudi & Sinaga (2018) used the theory in establishing the moderating role of organizational learning capability on the relationship between GSCM practices and sustainability performance of mining industry in Sierra Leone. According to the theory, environmental management in the supply chain can create competitive advantage to those practicing it. It highlights the whole concept of adopting this Effect of GSCM practices on the Performance of SDMFs in Kenya. NRBV theory anchored this study and formed the basis for moderating role of stakeholder pressure on the relationship between GSCM practices and performance of SDMFs. This study helped to fill this gap in the body of knowledge on NRBV theory and its implications for operations and manufacturing management.

GSCM practices (Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics) translate into a firm's strategic resources that allow a more systematic examination of the relationship between environmental and financial performance by specifying the link between resources and capabilities and strategic outcomes. In particular, the NRBV's emphasis on the contingent nature of resources and capabilities has aided researchers in making specific links between environmental and financial performance. Thus, the study adopted NRBV theory as the main anchor lens,

explaining that GSCM practices and stakeholder pressure are natural resources in their own set up that firms such as SDMFs may adopt to improve their results such as raising profitability levels, improving market shares and reducing costs of operations.

2.2.2 Stakeholder theory

Stakeholder theory is a view of capitalism that stresses the interconnected relationships between a business and its stakeholders (Eskerod, 2020). In 1984, R. Edward Freeman originally detailed the Stakeholder theory of organizational management and business ethics that addresses moral values in managing an organization. His award-winning book *Strategic Management: A Stakeholder Approach* identifies and models the groups which are stakeholders of a corporation, and describes and recommends methods by which management can give due regard to the interest of those groups (Bundy et al., 2018).

A stakeholder can be defined as “any group or individual who can effect or is affected by the achievement of an organization’s objectives due to adoption key strategies, policies or practices”. Stakeholder theory emerged in the 1980s as a response to the growing dynamism and complexity of the environment in which organizations operate. In this approach, all the individuals or groups that have a stake in the organization are considered in the strategic management and the organization is managed with the purpose of creating value for customers, suppliers, owners, employees and local communities. The theory argues that a firm should create value for all stakeholders, not just shareholders.

The stakeholder theory establishes that pressure from a range of stakeholder groups is an important motivation for the implementation of various environmental strategies and practices. Different stakeholder groups place different demands and expectations on companies and companies respond in heterogeneous ways in accordance with the power, legitimacy and urgency with which they regard a particular demand. These pressures can be categorized as coercive and non-coercive (mimetic or normative pressures) within the external environment and they are normally targeted at a group of companies within a particular industry as opposed to an individual company.

The main stakeholder source of coercive pressures is regulators, but pressure may also derive from powerful firms within the industry who exert a degree of political influence or other external stakeholders such as customers and suppliers (Boaventura et al., 2020). A number of environmental legislations have emerged in recent years, pressuring companies to comply with certain standards in terms of the environmental impact of their production processes. Non-compliance may result in penalties or fines for companies, so it is in their interest to meet the requirements of these groups who are pressuring them in a somewhat coercive manner (Jermisittiparsert, 2019). However, concerns have been raised about the effectiveness of this pressure source in achieving long term solutions that improve the environmental impact of firms. If companies are constantly responding to coercive pressures, they may be pushed towards practicing validation rather than practice improvement (Martin & Philip, 2021).

Non-coercive pressures can be mimetic or normative in nature (Parnell et al., 2018). Mimetic pressures mainly arise from a company's perception of their competitors' success resulting from certain practices (Esterhuyse, 2019). As the number of competitors adopting environmental practices increases, there is pressure for other companies within the same market to follow suit (Saleem et al., 2020). A company may seek to imitate these practices to reduce risk and achieve legitimacy by following the lead of companies they perceive as successful, or because they do not fully understand the requirements for sustained success themselves (Freeman et al., 2020). Normative pressures arise from industry or sector members attempting to define the way in which productive activity should be conducted within their area (Boaventura et al., 2020). This results in the development of sets of expectations for specific organizational contexts which are transferred through inter-organizational channels to the point where they become shared norms (Rui & Lu, 2020). Companies within organizational contexts affected by these norms will seek to conform to them in order to maintain their legitimacy (Freeman et al., 2021).

Companies will be influenced in different ways by these different types of pressure deriving from key stakeholder groups. Stakeholder theory argues that the development of reciprocal

and strategic relationships with stakeholders creates improved value (Boaventura et al., 2020). Although the normative perspective of stakeholder theory considers all stakeholders to have interests with intrinsic values regardless of their impact on the organization's performance, the strategic perspective of stakeholder management focuses on the relationships that are relevant for improving performance (Freeman et al., 2020). Thus, the strategic view of stakeholder theory suggests that organizations can create more value by distributing it to stakeholders that are relevant for organizational goals (Boaventura et al., 2020). SDMFs have a particularly complex set of stakeholders and neglecting stakeholder relationships may lead to limited success and insufficient value creation (Demartini et al., 2018). Thus, mapping these stakeholders and considering their interests and demands is relevant for the broader society and urgent for the survival of such firms. Stakeholder theory is not only seen as an ethical theory that is disconnected from management but also rather as one that is related to firm performance (Boaventura et al., 2020). All these issues are a useful evidence of the important role that stakeholders have on GSCM practices and performance. This theory forms the basis for the moderating role of stakeholder pressure on the relationship between GSCM practices and performance of SDMFs as great companies endure because they manage to get stakeholder interest aligned in the same direction.

2.2.3 Economic Approach theory

The economic approach theory describes firms' adoption behavior as driven by performance outcomes. A firm will more likely adopt a process or an innovation which will directly lead to improved financial performance. The theory seeks to identify the circumstances when it pays to be green and that managers exhibit rational behavior when they adopt beyond compliance environmental practices also known as environmental proactivity (King & Michael, 2001).

In the last 20 years, however, a growing number of researchers have challenged this assumption. Proponents of a causal link between environmental and financial performance argue that pollution reduction provides future cost savings by increasing efficiency, reducing compliance costs, and minimizing future liabilities. The opportunities for profitable

pollution reduction exist because managers often lack the experience and skill to understand the full cost of pollution. Excess returns (i.e., profits above the industry average) result from differences in the underlying fixed characteristics of firms and industries.

Managers may possess unique resources or capabilities that allow them to employ profitable strategies that are difficult to imitate. In the field of industry ecology, scholars argue that there are situations where beyond compliance behavior by firms is a win-win for both the environment and the firm. It will be expected that firms will adopt any practice that results to economic gain. As such, should it be established that adoption of GSCM practices positively affects economic outcomes of a firm; such a firm will willingly adopt such practices to maximize on such gain. Green adoption has been credited with winning firms' environmental conscious high-end clients, opens up controlled markets, lowers production costs and in the public sector, pulls green donors and grant makers. This theory supports the dependent variable, firm performance. This is because firms will adopt practices which lead to improved overall performance.

2.3 Empirical Literature Review

2.3.1 Green Purchasing and firm performance

The effect of Green Purchasing (GP) on performance has not been overlooked by researchers. To begin with, Ghosh (2018) conducted a study on Determinants of Green Procurement implementation and its impact on firm performance. The aim of this research work was twofold: first, to identify the determinants that influence adoption of Green Procurement practices in Indian firms; and second, to investigate the impact of adoption of Green Procurement practices on various parameters of firm performance. An online field survey questionnaire was developed and sent to 857 Indian manufacturing firms. One person knowledgeable on environmental issues in each firm filled the questionnaire. Analysis of data was done using multivariate analysis. The findings stipulate that internal environmental concern, Supplier Collaboration, customer pressure, competitive pressure and management

support positively influence Green Procurement. Subsequent finding was that Green Procurement adoption had positive relationship with performance.

A study by Balin & Sari (2023) explored The Effect of Green Purchasing Practices on Financial Performance under the Mediating Role of Environmental Performance: Evidence from Türkiye. All the 3,568,000 companies operating in Türkiye formed the target population. Computer-Assisted Telephonic Interview (CATI) was used to collect data on a systematic random sample of 457 purchasing managers from each of the sampled 457 companies in Türkiye above the minimum sample size of 384. Correlation analysis was used to establish the relationship between the variables as well as the mediating effect; consequently, linear regression analysis was used to establish the extent to which the independent variables explain the dependent variables. Balin & Sari (2023) study revealed that Green Procurement Practices positively impacts both Environmental Performance and Financial Performance.

What's more, scholars in the field of Green Purchasing have not ignored it at regional level. Anane (2020) conducted a study that adopted a comparative analysis on Ghana Water Company Limited and Bayport Savings and Loans Plc with reference to Green Procurement practices and organizational performance by assessing the moderating role of Supplier Collaboration with a quantitative research paradigm. Questionnaire was the main data collection instrument on a sample size of 160 employees from each company. A convenient sampling technique was used to select and administer research questionnaires. The study found that Green Procurement (Supplier Selection, Supplier Collaboration and Green Purchasing) was a significant determinant of organizational performance in both Bayport Savings and Loans and Ghana Water Co. Ltd. The study recommends that the management of the two companies must ensure continuous improvement in their green procurement practices in order to ensure the effectiveness and efficiency of the company's operations. The study also found that Supplier Collaboration has a significant effect on organizational performance in both Bayport Savings and Loans and Ghana Water Co. Ltd. The study, therefore, recommends that management of the two companies must ensure strong

collaborations with their green suppliers in order to enhance their performance in an effective and efficient manner. Again, the study found that Supplier Collaborations significantly moderate the relationship between green procurement and organizational performance in both Bayport Savings and Loans and Ghana Water Co Ltd. The study, therefore, recommends that the management of the two companies must strengthen their collaborations with their suppliers in order to enhance their performances in an effective and efficient manner.

Kaikai & Mose (2020) did a study that related Green Procurement adoption and performance of the mining industry in Sierra Leone. A critical analysis of the problems facing the mining industry showed that close to 90% of factories in Sierra Leone mining industry carry out their purchasing without a keen look at the impacts they have on the human health as well as the environmental safety and that 89% of all the Purchasing opportunities issued by the mining industry disrespected the environmental safety standards as set by the environmental regulatory body. The researchers vested their interest of Green Procurement on four specific objectives; to determine the effect of Green Distribution, Green Packaging, and Supplier Selection and Reverse Logistics on performance of the mining industry of Sierra Leone. A descriptive research design was employed to study a sample size of 150 Purchasing officers of five mining companies in Sierra Leone. Findings of the study denoted that Green Procurement practices such as Green Packaging, Green Distribution, Supplier Selection and Reverse Logistics have a significant effect on performance of the mining industry. The study concluded by advising managers of the mining firms as well as other firms to consider adopting Green Purchasing practices so as to realize improvement in performance (Kaikai & Mose, 2020).

Studies on Green Purchasing in Kenya have also been carried out in different contexts. Aleri & Monari (2018), through a correlational research design carried out a study on Green Logistics management and performance of registered automotive firms in Kenya. The research was prompted by the urge to utilize Green Purchasing as a tool for intensifying performance. The specific objective of the study was: to establish the influence of Green

Logistics Management on performance of registered automotive firms in Kenya. The study had a target population of 305 heads of departments of registered automotive firms in Kenya and Fischer's model was used to arrive at a sample of 170. Primary data was collected using questionnaires and interview guide. Descriptive and inferential statistics was used to analyze quantitative data. Multiple regression analysis established the coefficients of regression model. The study confirmed that Green Logistics Management had an effect on performance of registered automotive firms in Kenya. The findings confirmed that Green Purchasing practices: reduced costs, increased profits, increased Market Share and increased sales thus had a significant positive effect on performance of registered automotive firms in Kenya. The study proposed that firms should embrace relevant Green Logistics Management practices, a source of competitive advantage, thus heighten their performance.

A study tried to establish the impact of Green Purchasing on performance in the food and processing industry in Kenya (Bor, Ngugi & Odhiambo, 2019). The study employed explanatory research design and was anchored by reasoned action theory. Key staffs in supply chain, production and safety and environment or equivalent managers working for 187 food and beverage processing firms in Kenya were the target population. Purposive sampling technique was used and a census survey of all the 187 foods and beverage processing firms was carried out, the data collection instrument was a structured questionnaire and to accomplish the objective, alternative hypothesis was developed and tested. Data analysis was conducted using descriptive and inferential statistics; further other statistical tests were done in the study. Results of the study depicted a strong positive correlation between Green Purchasing and performance in the food and beverage industry and thus concluded that in the event that Green Purchasing is practiced; performance is bound to be improved (Bor et al., 2019). The study proposed that manufacturing firms should exhaustively embrace and employ Green Purchasing practices in conformance with all applicable legislations as an augmentation.

Reviewed studies on Green Purchasing and firm performance had five major gaps: first, the studies by (Gosh, 2018; Balin & Sari, 2023; Anane, 2020) were carried out on manufacturing

firms from various industry sectors and this can negatively impact comparability and generalization of findings. To overcome this gap this study was industry specific (Soft Drinks Manufacturing industry) thus comparability and generalization of data to a specific industry sector was made possible. Second, (Kaikai & Mose, 2020; Balin & Sari, 2023) studies had a narrowed field of participants that comprised of a purchasing manager. The attempt to approach profiles in a narrowed field, such as an expert or higher-level personnel who simultaneously hold decision-making authority, can be a limiting factor in terms of the scope and size of the sample and hence data collected could be biased. To overcome this gap, the current study's sample comprised five senior managers from diverse fields (Supply Chain, Safety and Environment, Production, Finance and Marketing) as well as Chief Executive Officers. Third, Anane (2020) study employed a structured questionnaire whose results are based on standardized questions with a predetermined framework. As a result, questions cannot account for the differences in attitudes, values and opinions of the participants. To overcome this gap, this study employed a semi-structured questionnaire. Finally, all the reviewed studies employed a quantitative method of data collection, as a result, slightly less insight into the thoughts, motivations, and drivers of participants are gotten. The current study employed both qualitative and quantitative data collection techniques making it possible for data triangulation.

2.3.2 Green Packaging and firm performance

A study by Zailani, Shaharudin, Govindasamy, Ismail & Mahdzar (2015) advanced a study on “the eco-efficiency practices of the sustainable packaging and its effect towards sustainable supply chain performance of manufacturing firms in Penang, Malaysia”. The study was grounded on the underlying principles of Resource-based View (RBV) theory. The Malaysia department of environment reported that manufacturing firms were the highest contributors of environmental concerns such as land, water and air pollution other than deprivation of public resources. The writers adopted a cross sectional survey research design on a target population of 700 companies. Census survey sampling was used in this study. 700 questionnaires were mailed to Participants, out of which 109 were returned, giving a

response rate of 15%. The study findings revealed eco efficiency practices have a significant positive relationship with sustainable packaging. On the other hand, sustainable packaging strongly influences supply chain performance of organizations

Kozik (2020) carried out a study on sustainable packaging as a tool for global sustainable development in Poland. There is increased attention in many areas of human activities but the recent focus has come to environmental, ecological and social concerns. Managers and policy makers in many multinational enterprises are faced with increasing pressure from owners and other stakeholders to consider strategies aimed at reducing negative impacts of these concerns. One such important strategy is sustainable packaging more so by the manufacturing firms which carry out packaging as a practice. Kozik (2020) characterizes sustainable packaging as a practice whose impacts are felt by virtually all the paradigms of sustainability, that is; society, economy and the environment. Even the competitiveness of an economy today rests on sustainable packaging (Kozik, 2020). This is necessitated by the unrestricted movement of goods across borders and their vast diversifications across borders. Thus, as globalization ensues, organizations must start thinking of packaging sustainably.

A plethora of scholarly work on Green Packaging has not been ignored in developing nations in Africa. Maziriri (2020) undertook a study in South Africa on Green Packaging and Green Advertising as the precursors of competitive advantage and organization performance in small and medium enterprises of the South African economy. The study targeted heads of departments of the Small and Medium Enterprises (SMEs) and the natural resource-based view theory provided a theoretical underpinning of the connection between green marketing practices, i.e. Green Packaging, competitive advantage and organization performance. The researcher considers that Green Packaging is itemized as a practice which presents an opportunity of maintaining the environmental pursuits of firms as well as the green product attributes of buyers and sellers. There is no doubt that Green Packaging leads to increased manageability of items. Furthermore, it is affirmed that Green Packing implies that containers used to ferry materials do not affect the current generations but at the same time

do not jeopardize the future generations. Maziriri (2020) concludes that there is no doubt Green Packaging will enable a firm to obtain competitive scales.

A study investigated the impact of sustainable packaging practices on performance of the pharmaceutical industry in Ghana (Owusu-Bio, Muntaka & Bonsu, 2016). The writers acknowledge that from the fact that there is a developing apprehension to organizations to consider green issues, there is an increasing need for researchers to advance studies in the field with a view to providing information and informing policy makers. Data was obtained from a sample size of 36 participants in Ghana's 4 locally-based manufacturers, 6 distributors, 16 retailers, and 5 health facilities found in the Ashanti Region. Results from the study stated that stakeholders in the firms adhered to environmental standards set by the regulatory authorities as well as standards set for sustainable product packaging in Purchasing practices. It was further noted that there was little coordination and cooperation between manufacturers and downstream supply chain members. Owusu-Bio et al. (2016) thus advised stakeholders in Ghana to forge a harmonious take in driving the sustainable packaging agenda.

Gikonyo, Ngugi & Nyang'au (2022) sought to find out the Influence of Green Packaging on Performance of Building and Construction Manufacturing Firms in Kenya. Anchored on institutional theory, this comes as the call for embracing sustainable development goals across all sectors is on the rise, and most companies are stepping in to embrace sustainable practices as a way of minimizing costs, ensuring customer satisfaction, and conserving the environment. In these presenting realities, Green Packaging is not an exception. The concept of environmental protection from any given angle is a hot global take, and stakeholders today have come of age to note that effective adoption of environmental techniques as well as GSCM practices such as Green Packaging remains imperative for firm performance. The study used a cross sectional research design on a target population of 900 managers working for 54 building and construction manufacturing firms in Kenya (as quoted by KAM, 2020). Primary data was collected using a structured questionnaire that was administered on a sample size of 270 heads of departments. Descriptive and inferential statistics were used to

analyze data. The results of the study showed that Green Packaging is a key determinant of firm performance in building and construction manufacturing firms.

Musalia (2018) set on a study titled: sustainable packaging practices and supply chain performance of the Kenya Medical Supplies Agency (KEMSA). The specific objectives of the study were: to determine the sustainable packing practices of KEMSA, to find out how selection of packing materials affect performance of KEMSA. A case study design was selected on a target population of 222 participants drawn from the Purchasing, Warehousing, Transport and Distribution department. Results of the firm revealed that KEMSA as an organization has not integrated the concept of sustainable packaging in its endeavors. Notwithstanding, if KEMSA were to adopt this scheme, it would benefit heavily ranging from reduced operational cost, attainment of competitive scales, harmonization of parties in the supply chain, and achieving a strategic fit between the supply chain department and the organization in wholesome. This is from the sheer fact that performance of the Supply Chain function would greatly improve. The study advises managers and policy makers in KEMSA and pharmaceuticals to consider adopting Green Packaging practices with a view to improving their performance (Musalia, 2018).

The reviewed literature (Zailani et al., 2015; Owusu-Bio et al., 2016; Sambu, 2016; Musalia, 2018; Kozik, 2020 & Maziriri, 2020), provides evidence of the paucity of similar studies and in the backdrop of the Soft Drinks manufacturing sector, specifically in Africa. It would be ingenuous to deduce a priori that findings from developed countries apply in Africa. Thus, so as to prove or disprove the previous studies' findings, this genre of research affiliated to SDMFs in Africa is evidently behindhand. Hence, the current study examined Green Packaging as one of the variables of GSCM practices and performance of SDMFs in Kenya, which is a developing country. On the same note, bulk of the reviewed studies on Green Packaging and performance (Zailani et al 2015; Maziriri, 2020; Owusu-Bio et al., 2016; Gikonyo et al., 2022 and Musalia, 2018) took a quantitative approach, and therefore there was a lack of rich insight and texture that a qualitative study could provide. On the same note, Kozik (2020) study was based on desk review and only qualitative analysis was done,

these limit credibility and trustworthiness of research findings. Current study utilized both quantitative and qualitative approaches for data collection and analysis thus enriching information was obtained by using qualitative work to obtain information on variables not obtained by quantitative surveys. By combining quantitative and qualitative approaches for data collection and analysis, qualitative work was used to understand unanticipated results from quantitative data. It also allowed triangulation of data by facilitating validation of data through cross verification.

2.3.3 Green Distribution and firm performance

Studies on Green Distribution have attracted attention from a number of scholars globally, with each presenting differing argument on the subject matter. In a study by Hutomo, Saudi, & Sinaga (2018) on the mediating role of organizational learning capability on the relationship between GSCM practices, (Green Distribution, Green Packaging) and sustainability performance of Indonesia and Malaysia fishery industries, the study analyzed Green Distribution on the basis of stakeholder pressure, more so from the primary stakeholders. The writes derived hypothesis on 325 employees from Malaysia and Indonesia fisheries industries. A conceptual framework, fronted to help decision and policy makers fathom the relationship between Green Supply Chain Management practices i.e. Green Distribution, organization learning capability and performance was developed. Systematic random sampling was applied to the sampling frame segmented in intervals. The results suggest that organization learning capability and environmental dynamism are congruent as they have a noteworthy impact on sustainability performance. The research study advised managers, decision makers and policy makers to become more versatile in driving GSCM practices agenda forward, more so Green Distribution. It is important for organizations to consider adopting policies meant for improving their sustainability performance (Hutomo et al. 2018).

A study by Lu, Xie, Chen, Zou & Tang (2019) tried to construct an environmental logistics performance index (ELPI) for assessing the overall performance in green transportation and logistics practices of 112 countries. Logistics Performance Index (LPI) measured the index,

CO₂ emanations and oil usage in the transport sector of the selected countries, using a range-adjusted measure (RAM) of the Data Envelopment Analysis (DEA). These writers further employed the Range- Adjusted Measure (RAM) of the DEA as the data analysis instruments. It is recognized that negative externalities in the transport sector have long had wavering effects on performance of the transport and logistics industry. Lu et al. (2019) recognizes that globalization of trading activities, complex supply chains, dynamic technologies among others have aroused the need for global logistics and transportation infrastructure. Even though, it is reported that international logistics structures have come of age and are deriving ways of improving their sustainability performance. While this is plausible, the study further notes that transportation sector accounted for ¼ of the total emissions in 2016 and CO₂ emissions from logistics, transportation and freight accounted for 42% of the total-transported related emissions (Lu et al, 2019). It was found out that environmental logistics performance is strongly related to logistics performance.

Anucha (2019) carried out a study on Green Distribution practices and Environmental Sustainability Practices of Sachet and Bottle Water Producers in River State in Nigeria, the study sampled employees of the Sachet and bottle water producing companies. Data used in the study was obtained from 200 participants from a possible population of 400 Participants deduced through Yamane's 1971 mathematical approach. A 5-point likert scale structured questionnaire was issued to participants. The study conceptualized Green Distribution as green storage, green transportation, Green Packaging and Reverse Logistics. Results of the study showed that green transportation has a positive significant relationship with environmental sustainability. It was concluded that adoption of green transportation enhances environmental sustainability in the organization. More so, the results of the study showed that green storage has a positive significant relationship with environmental sustainability and thus concluded that green storage strongly improves sustainability performance in the organization. Additionally, Anucha's (2019) findings depicted that both Green Packaging and Reverse Logistics influence environmental sustainability given that they have a significant positive relationship.

Dare, Aubyn & Boumgard (2019) conducted a study on: Analyzing, Evaluating and improving the performance index of logistics performance index of a country's economy. The authors selected three West African Countries i.e. Nigeria, Morocco and Ghana. The data utilized in this study were sourced from secondary sources in addition to the expert opinion from administered questionnaires. Based on the fact that the study relied largely on existing data, it used and compared both the data from the Liner Shipping Connectivity Index produced by UNCTAD and World Bank Logistics Performance Index. A survey instrument on the other hand, was administered to a total of 10 practitioners and stakeholders selected non-randomly from shipping companies (such as Maersk), terminal operators, logistics and supply chain managers, freight forwarders, manufacturers/shippers and regulators. The study notes that trade between and among countries, more so in Africa, has greatly expanded. This has called for advancement and promotion in management of logistics operations in global trade, turning it into an important sponsor of a country's economy. The world is today developing into a global economy orchestrated by technology and globalization practices. As this unfolds, Africa, more so West African countries (that is Morocco, Nigeria and Ghana) are taking crucial roles as suppliers of commodities and as consumers of products from other countries. The results by Dare et al. (2019) notes that infrastructure as the main aspect which measures logistics performance, while tracking and tracing as the least measure of logistics performance. The country with the highest performance measure was Morocco (0.561), followed by Ghana (0.496) and lastly Nigeria (0.457).

The concept of Green Distribution and its effect on various performance metrics has not been overlooked by scholarly writers in Kenya. A study by Yusuf (2020) dwelt on effect of Green Distribution on the Performance of Manufacturing firms. An exploratory research design, embedded in a positivism philosophy was adopted to study 943 manufacturing firms from Nairobi and Kiambu counties in Kenya which were registered by KAM. Yusuf reiterates that the increasing global economy is good but also bad. Even though expanding the global economy results in market interconnectedness, it has resulted in environmental pitfalls for example climate crisis, pollution, extinction of species, ozone layer depletion. Stakeholders have thus come of age, and are pushing managers and policies to consider

addressing these environmental issues. Green Distribution has been fronted as a good strategy to address these environmental concerns. Study results show that Green Distribution positively and significantly influence performance of manufacturing firms.

In another study by Kirunga & Kihara (2018) on Influence of Green Distribution practices on environmental performance of Chemical manufacturing firms in Kenya, the writers sought to achieve four objectives which were specific; to establish the influence of Green Packaging; green transportation; green storage and eco-labeling on environmental performance of chemical manufacturing firms in Kenya. Census survey sampling technique was employed to study 27 chemical manufacturing firms as quoted by Kenya Association of Manufacturers (KAM). Findings indicate that all the variables in the study (Green Packaging, green transportation, green storage and eco labelling have a significant positive effect on environmental performance of chemical manufacturing firms in Kenya. Kirunga & Kihara (2018) advised chemical manufacturing firms as well as other manufacturing firms to consider have a continual focus on adopting Green Packaging, green transportation, green storage and eco-labeling practices so as to enhance performance.

Several methodological gaps existed on reviewed studies on Green Distribution and performance. Hutomo et al.'s (2018) systematic random sampling used in the study did not give a sample population conversant with the study topic thus data used could have resulted in biased research findings which have no validity. This study adopted purposive sampling to sample only heads of department who are well conversant with matters supply chain. Lu et al's., (2019) study used Document Envelop Analysis as an analysis instrument. Document Envelop Analysis ignores statistical errors, does not say how to improve efficiency and has difficulties in performing statistical tests with the results. In this study, data was subjugated to regression analysis; assumptions were examined to confirm that they hold before subjugating the data to parametric tests. This ensured that statistical tests with results were performed thus eliminating statistical errors. Anucha's (2019) and Dare et al.'s (2019) studies used descriptive statistics to analyze data which can only be used to display and explain results of known data and can't be used to gather conclusions and make

determination about a population. Current study overcame this gap whereby conclusions were inferred from not only descriptive statistics but also inferential statistics which helped to compare data, test hypothesis and make predictions. Yusuf's (2020) study was carried out on 943 manufacturing firms from various industry sectors in Nairobi and Kiambu counties in Kenya which were registered by KAM. This can negatively impact the comparability of data collected and generalization of findings as GSCM practices are not always broadly applied and may be inconsistent. To overcome this gap current study was industry specific (Soft Drinks Manufacturing industry) thus comparability and generalization of data to a specific industry sector was made possible. Kirunga & Kihara's (2018) study considered Green Packaging; green transportation; green storage and eco-labeling as the predictor variables for Green Distribution. The use of limited predictor variables to measure the research outcome limited the extent to which a measurement is achieved. Hence, the conclusion of Kirunga & Kihara's (2018) would be difficult due to useful information/data being not available as they are hidden in issues that have been unresolved. Current study had a close evaluation of predictor variables of Green Distribution thus effective outcome.

2.3.4 Environmental Oriented Reverse Logistics and firm performance

Yu, Tianshans & Ud Din (2018) in a study on the impact of Reverse Logistics on operational performance in China, reveals that managing Reverse Logistics is an integral part of Supply Chain Management. They consider Reverse Logistics as "the process of moving goods from their typical final destination for the purpose of recycling, reuse, capturing value, or proper disposal". An ugly side of reality is that many stakeholders only consider logistics as recollecting broken and expired products from customers for recycling and reusing. A main objective of Reverse Logistics is reducing bad impacts on the environment, improve SC efficiency and reduce the costs of operation. It's further espoused that among the main driving aspects of Reverse Logistics is optimization of partnering networks, coordinating practices and processes and the execution of this practices and processes. The study found out that Reverse Logistics has a significant and positive relationship with performance

(operation, financial and environmental). Thus, policy makers and managers must consider adopting the scheme

Alnoor, Eneizan, Makhamre & Rahoma (2019) conducted a study in Southern Iraq on the effect of Reverse Logistics on sustainable manufacturing. The questionnaire was adopted as the main data collection instrument on 1 multinational company located in Basra, Southern Iraq. Simple random sampling was further embraced to sample 208 employees. It is recognized that sustainability has received much attention from scholarly works in the last two decades than before, especially in Iraq after signing the second, third, and fourth licensing contract rounds for oil and gas exploration with identified companies. Sustainability has been widely acknowledged in literature as an important tool to deal with environment issues. Organizational managers and policy makers' musts seamlessly integrate supply chain management with value-generating activities in the supply chain. Alnoor et al. (2019) also posit that where an organization implements efficient Reverse Logistics schemes, it will be able to better manage the environment by post production and consumption wastes on land, water and air. A consensus among practitioners exists that prudent management of Reverse Logistics can make a firm reduce costs and achieve customer satisfaction. Even, other schools of thought establish that Reverse Logistics is a complex scheme that its inception may dwindle firm financial resources. The study confirms that implementation of Reverse Logistics has a positive significant effect on sustainable manufacturing.

Mandota (2015) carried out a study on the impact of Reverse Logistics on the supply chain performance in Malawi manufacturing sector, basing on Carlsberg Malawian plant. It is posited that Reverse Logistics derives many advantages to a firm, including but not limited to enabling a firm to obtain a competitive advantage and improving its brand image. While this is so, it's however argued that a major challenge of adopting Reverse Logistics practices is the absence of a green system to implement sustainability. Qualitative and quantitative data was adopted through an inductive and deductive approach. The study sampled 40 participants from a target population of 200 to take part in the study. As the world's Reverse

Logistics undergoes a paradigm shift from black to green, organizations have started moving towards environmental policies and regulations for both commercial supremacy issues and profit motives. In essence, Reverse Logistics improves the green environment. The results from the study showed that among the main challenges facing logistics operations are inability to identify hidden Reverse Logistics costs, complex nature of Reverse Logistics when in operations. Therefore, it was recommended that governments, organizations, regulatory authorities must collaborate in order to effectively manage and implement the Reverse Logistics agenda forward.

In a study by Ebenezer & Zhuo (2019) on Reverse Logistics and performance of bottled and Sachet water manufacturing firms in Ghana, it was found out that Reverse Logistics has a significant and positive influence on competitive advantage and organization performance. A sample size of 187 Purchasing managers, production managers, Logistics and Supply Chain managers were sampled from Ghanaian bottled and Sachet manufacturing firms. In today's business environment which is characterized rising levels of competitions, rigorous legal and regulatory covers and increased awareness of stakeholders on environmental issues, organizations are increasing under pressure from stakeholders to adapt to Purchasing and supply chain sustainability. An important concept of interest in this regard, is Reverse Logistics. It is viewed by many stakeholders and practitioners as the panacea to all environmental concerns. Ndung'u & Moronge (2017) agree with these propositions. Ebenezer & Zhuo (2019) goes on to put forward that from these presenting acclaims, firms and organizations have started to investigate their resources; more so time and finance to adopt the idea of Reverse Logistics so as to incorporate its practices into their operations and objectives. The study also reported that competitive advantage strongly influences performance of firms.

In Kenya, Bor (2020) undertook a study on the effect of Reverse Logistics on performance of food industries in Kenya. An explanatory research design was adopted on a target population comprised of employees in Purchasing & Supply Chain, production and safety and environmental departments in 187 food manufacturing firms. A research questionnaire

was developed to gather information from the participants. To arrive at a sample size, the study embraced a census survey where all the 187 targeted food processing firms were sampled. The researcher discusses that the concept of Reverse Logistics has received an imminent focus in the decade due to presenting situations multiplied by the concern on environmental matters, economic significances and growing sustainable developments. All these, Bor (2020) says, economic performance can accrue to an organization that effectively manages its Reverse Logistics schemes. Closely intertwined with Reverse Logistics is the concept of product management recovery which was implemented by manufacturing firms since time immemorial. The study established Reverse Logistics has a significant and positive effect on performance and thus advised managers to consider implementing a workable framework of logistics practices.

In a study by Mbovu & Mburu (2018) on Influence of Reverse Logistics Practices on enhancing Competitiveness in manufacturing firms in Kenya, considering the East African Breweries Ltd (EABL), population of the study comprised of 24 staff in Purchasing and Finance of EABL. Questionnaires were used as measuring instruments. More so, simple random sampling was applied as a sampling technique. In order to ensure the reliability of measuring instrument, the study conducted a pilot study on 5% of the sample who were not part of the actual sample and ascertained the reliability through Cronbach's Alpha technique. The results showed that Reverse Logistics practices have a positive and significant effect on the competitiveness of manufacturing firms. It was thus recommended manufacturing firms need to consider practicing Reverse Logistics activities. Such activities include mounting training and development programs for employees on repair and maintenance so as to meet consumer expectations; repackaging products and sending them to the market among others.

Studies on Environmentally-Oriented Reverse Logistics and performance had gaps on several fronts. Yu et al. (2018), Ebenezer & Zhuo (2019) and Mbovu & Mburu (2020) studies used regression as the main analysis method but assumptions were not checked. To overcome this gap, data was subjected to regression analysis and assumptions were checked to ensure that they hold before subjecting the data to parametric tests, these tests include

normality, linearity, multicollinearity and homoscedasticity. Mandota (2015) and Alnoor et al. (2019) studies' samples were arrived at by random sampling which might have led to sampling error and bias thus resulting in a sample that is not well conversant with the study topic. The current study bridged the gap by using census survey for quantitative and qualitative data thus the sample obtained represented the entire population studied and facilitated the generalization of findings. Bor's (2020) study used only quantitative data collection technique. This study filled the gap by using both quantitative and qualitative data collection techniques thus resulted in concrete findings as triangulation of findings was made possible.

2.3.5 Green Supply Chain Management Practices, Stakeholder Pressure, Firm performance

Graham, (2020) in a study on the Influence of internal and external stakeholder pressure on the implementation of upstream environmental supply chain practices in the food industry in the United Kingdom (UK). A semi structured interview schedule was used to collect data from managers of 149 manufacturing firms located within the U.K. food industry. Multiple hierarchical regression analysis was used to test the hypothesized relationships. The results suggest that proactive strategy and competitive pressure exert both independent and combined influences on environmental supply chain practices. Proactive strategy appears to be a stronger driver of these practices, suggesting that internal stakeholders such as directors, managers, and employees may be more influential in the adoption of certain practices than external stakeholder pressures.

Hashmi & Akram (2021) carried out a study on impact of Green Supply Chain Management on financial and environmental performance: mediating role of operational performance and the moderating role of external pressures. This study examined the relationship between GSCM, environmental and financial performance of firms. Further, the study examined the mediating role of operational performance between the relationships of GSCM-environmental performance and GSCM-financial performance. Additionally, the moderating role of external pressures (regulatory and customer pressures) was examined on

the relationship of GSCM and operational performance. Data for this study was gathered from executives of several industries in the public and private sector like manufacturing, pharmaceutical, logistics, electronic and agricultural companies in Pakistan. The reason of choosing various industries was that Green Supply Chain Management (GSCM) plays its role in every industry and all companies in one industry aren't incorporating GSCM practices. Thus, the researchers had to look for companies around different sectors that implement GSCM. Using convenience sampling, surveys were distributed to 420 executives working in such companies and 277 responses were found usable for analysis. The study findings revealed that GSCM is positively related to financial and environmental performance of the organization. The results confirm partial mediation between the relationship of GSCM-financial performance and GSCM-environmental performance respectively. The results also suggest that the external pressures (regulatory and customer pressures) moderate the association of GSCM and operational performance in a manner that the association will be strong when external pressures are high.

Ombati & Hirschsohn (2015) conducted a study that investigated how stakeholder salience, based on stakeholder power, legitimacy and urgency impacts on Sustainable Supply Chain Management (SSCM) practices, a case study of MaxTech, one of the leading innovative cellular firms in Africa. Data was collected from MaxTech's management and its key stakeholders, which comprised of the community at large, telecoms regulator, corporate customers, and the suppliers who exemplified dissimilar salience levels. A semi structured interview schedule was used to collect data. Content analysis was used to analyze data. The study divulged that the more the number of attributes a stakeholder has, the more attention the stakeholder is accorded and hence the stakeholder has more influence on MaxTech's SSCM practices. The study recommended that managers need to appreciate prioritization of their stakeholders based on the stakeholder's attributes so as to effectively manage their organization's expectations while sustaining the firm's bottom line.

Adomako & Tran (2022) investigated the impact of environmental collaboration on firm performance through the mediating mechanism of responsible innovation and moderating

role of stakeholder pressure. Using data collected from 225 firms in Ghana, the results showed that a firm's level of environmental collaboration influences responsible innovation. The findings also revealed that the impact of environmental collaboration on responsible innovation is greater when stakeholder pressure is higher than when it is low. Finally, the findings revealed that the relationship between environmental collaboration on firm performance is mediated by responsible innovation.

Moyo, Duffet & Kinoti (2020) carried out a study titled: Environmental Factors and Stakeholders Influence on Professional Sport Organizations Engagement in Sustainable Corporate Social Responsibility in South Africa. The study adopted an interpretivist philosophy and as well as a qualitative research approach in obtaining primary data. The study targeted a population of all sporting organizations in South Africa, more specifically picking on three, soccer, cricket and rugby. A set of criteria was developed to identify the professional sport organizations that would be selected for the study. The criteria prescribed that the professional sport organizations should be: an organization where sports is the primary product, must be a registered professional company, must engage in some form of CSR initiatives, and must participate in at least one major tournament in the sports code. Using these criteria, a sample of six professional sport organizations were selected in order to reflect the three codes across the country, namely: The Sharks, the DHL Stormers, the Cape Cobras, the Highveld Lions, Ajax Cape Town FC and SuperSport United FC. This study followed the key informant technique, whereby the participants were chosen on the basis of specific knowledge that they possess. Ten key individuals from within these organizations (that were directly involved in the CSR initiatives) were purposively selected and interviewed using in-depth, semi-structured interviews. The main objective of this study was to identify the factors and stakeholders that influence the engagement of South African professional sport organizations in CSR initiatives, as well as how these influenced the sustainability of such initiatives. The study revealed that professional sport organizations in South Africa identified the importance of CSR and incorporated CSR as a part of their good business practice. The study also revealed that stakeholder engagement is essential for the sustainability of CSR initiatives. Three types of stakeholders could be deduced from the

findings, namely: corporate partnerships, non-corporate partners and the targeted community.

Ombati & Hirschsohn (2018) carried out a study on managing stakeholder salience, influence, and exposure with sustainable supply chain management practices and triple bottom line measures on Safaricom Plc. The study was guided by four main specific objectives: to establish key attributes namely; power, legitimacy and urgency of selected stakeholders of Safaricom and the determinants of their salience, to determine the expectations of these stakeholders, to establish the relationship between Safaricom's SSCM practices and TBL measures, to establish how, and to what extent, Safaricom aligns its SSCM practices and TBL measures with stakeholder exposure. The study used a case study design with a structured interview as the main data collection tool. The study gathered data from Safaricom management, community, Communication Authority of Kenya (CA), corporate customers, and the suppliers. Study findings revealed that stakeholder pressure moderates the relationship between sustainable supply chain management (SSCM) practices. The results suggest that environmental factors have a significant positive relationship with Corporate Social Responsibility.

Reviewed studies (Ombati &Hirschsohn, 2015; Ombati &Hirschsohn, 2018; Hashni & Akram, 2021 and Adomako & Tran, 2022) on moderating effect of Stakeholder Pressure on the relationship between GSCM practices and performance had gaps on several fronts. First, reviewed studies were limited in comparability of findings as the research were conducted in either one company (Ombati &Hirschsohn, 2015 and Ombati &Hirschsohn, 2018) or firms from various industries thus it cannot be assumed that the views of its stakeholders represents the views of stakeholders of other similar firms and at the same time stakeholders' views differs across various industries. The current study overcame this gap as data was collected from several firms in the same industry thus research bias was limited and comparability of findings was facilitated. Second, Graham's (2020) study does not address the moderating effect of Stakeholder Pressure on the relationship between GSCM practices and firm performance in other environments. United Kingdom has the strong values of an

individualistic culture thus tends to demonstrate greater climate change and environmental policy efforts because cultural traits of individualism help enhance the quality of government representation on environmental matters and stakeholder collaboration. Therefore, the findings must be interpreted based on a collectivistic culture where the country offers assertiveness and independence for managers to collaborate with stakeholders and at the same time families and communities have a central role in environmental management. To overcome this gap, this study was carried out in the Kenyan context that has an individualistic culture. Third, previous studies on this relationship have pointed out various stakeholders, e.g. internal as well as external stakeholders (Ombati &Hirschsohn, 2015; Ombati &Hirschsohn, 2018; Graham, 2020 and Hashni & Akram, 2021). Moreover, most reviewed studies (Adomako & Tran, 2022; Graham, 2020; Ombati &Hirschsohn, 2018 and Ombati & Hirschsohn, 2015) focus on both internal and external stakeholders as moderating variables in the relationship between GSCM practices and performance thus findings might not be conclusive. Finally, Other studies adopted Stakeholder Pressure on different models (e.g. Moyo, Duffet & Knott (2020) investigated Environmental Factors and Stakeholders Influence on Professional Sport Organizations Engagement in Sustainable Corporate Social Responsibility in South Africa; Adomako & Tran (2022) investigated the impact of environmental collaboration on firm performance through the mediating mechanism of responsible innovation and moderating role of stakeholder pressure). According to Meixell et al. (2015), the influence of different stakeholders is different for social and environmental issues in that employees and NGOs influence social sustainability more, while other stakeholders, e.g. government, competitors and customers, influence the environmental side of sustainability more. Current study considered only external stakeholders (regulator, competitors and customers) since they influence the environmental side of sustainability more according to Meixell et al. (2015).

Table 2. 1: Summary of key Studies and Knowledge Gaps

Author(Year)	Title	Theory	Methodology	Major findings	Knowledge gaps	How gaps are addressed in current study
Adomako & Tran (2022)	Investigating the impact of environmental collaboration on firm performance through the mediating mechanism of responsible innovation and moderating role of stakeholder pressure.	No theory	Data was collected from 225 firms in Ghana the results showed that a This study had some limitations.	Firm's level of environmental collaboration influences responsible innovation. The findings also revealed that the impact of environmental collaboration on responsible innovation is greater when stakeholder pressure is higher than when it is low. Finally, the findings revealed that the relationship between environmental collaboration on firm performance is mediated by responsible innovation.	-Findings of the study are based on a Ghanaian sample which does not address the other environments. -Environmental collaboration was measured by using self-reported data.	-This study was carried out in the Kenyan context. -This study overcame this gap by employing qualitative and quantitative methods thus triangulated data to get relevant findings.
Aleri & Monari (2018)	Influence of Green Logistics Management on Performance of registered Automotive Firms in Kenya	No theory	Correlational research design. The target population was 305 heads of departments and a sample of 170 was arrived at using the Fischers' model. Questionnaires and interview guide were used to collect primary data. Quantitative data was analyzed through	Green Purchasing practices had a positive effect on performance of registered automotive firms in Kenya	Study does not consider the effect of a moderator on the relationship between the Influence of Green Logistics management on performance.	Current study explored moderating variable that provided more understanding of the strength of the relationship between GSCM practices and performance

			descriptive and inferential statistics.			
Alnoor, Eneizan, Makhamre and Rahoma, (2019)	To assess the effect of Reverse Logistics on sustainable manufacturing, Lukoil Company, Southern Iraq	No theory	The study was applied in oil company works in the south of Iraq, Lukoil. The sample of 208 employees out of a total number of 600 was randomly chosen	study confirms that implementation of Reverse Logistics has a positive significant effect on sustainable manufacturing	Sample was arrived at by random sampling which might have led to a sample that is not well conversant with the study topic	Current study used purposive sampling to sample the unit of observation
Anane (2020)	A comparative analysis of Ghana Water Co. Ltd. and Bayport Savings and Loans Plc. with respect to GPP and firm perf by assessing the moderating role of Supplier Collaboration	Resource-based view Relational view theory	Quantitative research approach; structured questionnaire solicited data from 160 staffs of both Ghana Water Co. Ltd and Bayport Savings and Loans Plc.	Green Purchasing is a significant determinant of organizational performance.	Study employed a quantitative research approach; a structured questionnaire	This study was qualitative and quantitative. A semi-structured questionnaire was used to solicit primary data
Anucha, (2019)	To assess Green Distribution Practices and Environmental Sustainability Practices of Sachet and Bottle Water Producers in River State in Nigeria	No theory	Cross-sectional survey of Sachet and bottle water producing companies. 200 participants from a possible population of 400 Participants deduced through Yamane's 1971 mathematical approach	Green transportation, green storage, Green Packaging and Reverse Logistics have a positive significant relationship with environmental sustainability and enhance environmental sustainability in the organization.	Descriptive statistics was used to analyze data which can only be used to display results and can't be used to gather conclusions and make determination about a population.	This study overcame this gap were inferred from inferential statistics.

Balin & Sari (2023)	The Effect of Green Purchasing Practices on Financial Performance under the Mediating Role of Environmental Performance: Evidence from Türkiye	-Resource Based View theory - Relational View Theory	A survey of 455 Purchasing managers from companies in Türkiye. Correlation analysis.	There exists a significant positive relationship between Green Purchasing practices and financial performance	Participants were from companies in different sectors thus negatively affect data comparability Narrow field of Participants (purchasing managers only per company) thus a limiting factor in terms of scope and sample size	This study collected data from a specific sector thus comparable. Current study comprised of Participants from diverse fields (five senior managers in each firm)
Bor, (2020)	To determine the effect of logistics on performance of food industries in Kenya	No theory	A Census survey survey of 187 Food processing firms registered with the Kenya Association of Manufacturers. Data analysed using descriptive and Inferential Statistics	There exists a positive significant relationship between Reverse Logistics and performance	The study only used quantitative data collection technique d	Study used both qualitative and quantitative data collection techniques
Bor, Ngugi & Odhiambo (2019)	To find out the effect of Green Purchasing on performance of food and beverage processing firms in Kenya	Reasoned action theory.	Census survey survey, 187 Food & Beverage processing firms registered with the KAM. Data was analysed using Descriptive and Inferential Statistics	A strong positive correlation between Green Purchasing and performance in the food and beverage industry	Variables moderating the outcomes have not received sufficient attention	Study explored moderating variable that could provide more understanding of the strength of the relationship between GSCM practices and performance

Dare, Aubyn & Boumgard (2019)	Analyzing, evaluating and improving the logistics performance index (LPI) of a country's economy: Case study : Nigeria, Ghana and Morocco	No theory	Secondary data sources and expert opinion from questionnaires. Survey administered to 10 practitioners and stakeholders. Qualitative and quantitative data analysis was employed.	Innovation and environment specifically Green Distribution are components that decide logistics performance	Study conducted in West African countries thus the findings may not apply owing to the difference in culture, economy and governorship.	Study was conducted on Soft Drinks Manufacturing Firms in Kenya.
Ebenezer and Zhuo, (2019)	Reverse Logistics and performance of bottled and Sachet water manufacturing firms in Ghana	Resource-Based view theory	A sample size of 187 Purchasing managers, production managers, Logistics and Supply Chain managers from Ghanaian bottled and Sachet manufacturing firms. PLS-SEM was the main tool for data analysis	Reverse Logistics has a significant and positive influence on competitive advantage and organization performance	Variables moderating the outcome of Reverse Logistics have not received sufficient attention	Study explored moderating variable that provided more understanding of the strength of the relationship between GSCM practices and performance
Ghosh (2018)	Determinants of Green Purchasing implementation and its impact on firm performance	No theory	Online survey of 857 various Indian manufacturing firms. Multivariate analysis was employed	Green Purchasing adoption has positive effect on all selected firm performance parameters	Study was not industry specific, respondent field was narrow and employed only quantitative data collection technique	This study was carried out from a specific industry. Study comprised of Participants from diverse fields. Both qualitative and quantitative techniques were used to collect data
Gikonyo, Ngugi & Nyang'au (2022)	The Influence of Green Packaging on Performance of Building and Construction	Institutional theory	The study adopted a cross sectional research design on a sample size of 270 managers from	The results of the study showed that Green Packaging is a key determinant of firm	Study employed a structured questionnaire thus, questions	This study employed a semi-structured questionnaire.

	Manufacturing Firms in Kenya		54 building and construction manufacturing firms in Kenya. Descriptive and inferential statistics were used to analyze data.	performance in building and construction manufacturing firms.	cannot account for the differences in attitudes, values and opinions of the Participants.	
Graham, (2020)	To assess the influence of internal and external SP on the implementation of upstream environmental supply chain practices in the food industry in the UK	Stakeholder theory	Postal survey UK food industry of 1200 key informants in companies operating within the Standard Industrial Classification (SIC) DA 15. Hierarchical regression analysis was used to test the theoretical model and hypotheses	Stakeholder pressure has a significant and positive effect on the implementation of supply chain practices	Inconsistency of results from those reported in earlier studies	Study confirmed results of Graham (2020)
Hashmi & Akram (2020)	Impact of Green Supply Chain Management on Financial and Environmental performance: mediating role of Operational Performance and the moderating role of External Pressures.	No theory	Survey methodology from 277 executives in various manufacturing firms in Pakistan and hypothesis tested using structural equation modelling (SEM)	GSCM is positively related to financial and environmental performance. Partial mediation between GSCM-financial performance and GSCM-environmental performance. External Pressure moderates the relationship between GSCM and operational performance.	-Not anchored on a theory -Considered GSCM as a unidimensional construct	-Study was anchored on stakeholder theory - GSCM was considered as a multidimensional construct
Hutomo, Saudi, & Sinaga (2018)	To establish the mediating role of organizational learning capability on the relationship between GSCM	Natural Resource-Based	Survey of 325 employees from Malaysia and	Organization learning capability and environmental dynamism are congruent as they have a significant effect	The systematic random sampling used in the study did	This study adopted purposive sampling to sample only CEOs and senior

	Practices and sustainability performance of Indonesia and Malaysia fishery industries	view theory	Indonesia fisheries industries.	on the sustainability performance	not give a sample population conversant with the study topic	managers who are well conversant with matters supply chain
Kaikai & Mose (2020)	To determine the effect of Green Purchasing adoption on performance of the mining industry in Sierra Leone.	No theory	A descriptive research design was employed to study a sample size of 150 Purchasing officers of five mining companies in Sierra Leone. SEM used as the main statistical analysis tool	Green Purchasing practices such as Green Packaging, Green Distribution, Supplier Selection and Reverse Logistics have a significant effect on performance of the mining industry	The major gap in this study is that it employed only quantitative technique of data collection.	
Kozik (2020)	To examine sustainable packaging as a tool for global sustainable development in Poland	No theory	Desk review	More companies are taking steps to create a pro-environment and pro-social industry from the packaging industry. They consider packaging not only in economic terms but also environmental, social and ethical	Study was based on desk review. Only qualitative analysis was done	Study adopted a cross sectional research survey with a target population and sample size. Both qualitative and quantitative analysis were used.
Lu, Xie, Chen, Zou & Tang (2019)	To assessing the overall performance in green transportation and logistics practices of 112 countries	No theory	Study uses the RAM model under natural disposability to measure the environmental logistics performance index of each country. Data Envelopment Analysis was the data analysis instruments	Negative externalities in the transport sector have long had wavering effects on performance of the transport and logistics industry. Environmental logistics performance is strongly related to logistics performance	Document Envelop Analysis as an analysis instrument ignores statistical errors, does not say how to improve efficiency and has difficulties	Data was subjected to regression analysis; assumptions were checked to ensure that they hold before subjecting the data to parametric tests. Statistical tests with results were

					in performing statistical tests with the results	performed thus eliminating statistical errors and suggested how performance can be improved.
Mandota (2015)	To establish the impact of Reverse Logistics on the supply chain performance in Malawi manufacturing sector, basing on Carlsberg Malawian plant	No theory	Cross-sectional survey of a sample of 40 was used to represent population of 200. Descriptive analysis was conducted	Reverse Logistics improves the green environment. Main challenges facing logistics operations are inability to identify hidden Reverse Logistics costs, complex nature of Reverse Logistics when in operations	There is a need to conduct a study in East Africa particularly Kenya to get more insight	study filled the gap by gathering information from Soft Drinks Manufacturing Firms located in Kenya
Maziriri (2020)	Green Packaging and green advertising as the precursors of competitive advantage in small and medium enterprises of the South African economy	Natural Resource-Based-View theory	Study pursued a quantitative research approach. Sample size of 321 manufacturing SMEs was calculated using the Rao soft sample size calculator. Correlation analysis was the main data analysis technique	Green Packaging is itemized as a practice which presents an opportunity of maintaining the ecological activities of firms and the green item characteristics of items among buyers and sellers	This study utilized a quantitative research approach	This study utilized quantitative and qualitative approaches as well. Such explorations enabled triangulation of findings thus increase credibility and reliability of research findings
Mbovu and Mburu (2018)	To determine the influence of Reverse Logistics Practices on enhancing Competitiveness in manufacturing firms in Kenya, considering the East	No theory	A case study of Kenya Breweries Limited. Sample of 72 was arrived at from a target population of 240 staff using Yamane (1973) formulae. Study adopted a	Reverse Logistics practices have a positive and significant effect on the competitiveness of manufacturing firms	Study relied on qualitative data thus the findings might not be conclusive enough	Study collected both qualitative and quantitative data to arrive at conclusive findings

	African Breweries Ltd (EABL)		multiple regression analysis				
Moyo, Duffet and Knott (2020)	To assess Environmental Factors and Stakeholders Influence on Professional Sport Organisations Engagement in Sustainable Corporate Social Responsibility in South Africa	No theory	study targeted a population of all sporting organizations in South Africa, more specifically picking on three, soccer, cricket and rugby	Internal and external stakeholders have a positive influence on Professional Sport Organisations Engagement in Sustainable Corporate Social Responsibility in South Africa	Study was not grounded on any theory	Study was grounded on various theories	
Musalia (2018)	To assess sustainable packaging practices and supply chain performance of the Kenya Medical Supplies Agency (KEMSA)	Life Cycle Assessment (LCA) Transaction Cost Economics theory	A case study design was selected on a target population of 222. Sample of 22 employees distributed across all cadres at Kenya Medical Supplies Agency (KEMSA) was selected using stratified random sampling. Data analysis procedure adopted by this study was content analysis.	KEMSA has not integrated the concept of sustainable packaging in its endeavors. If KEMSA were to adopt this scheme, it would benefit heavily	Study relied on content analysis thus causality cannot be established as it merely describes the data. It can also not extract any deeper meaning or explanation for data pattern arising	Data was subjected to regression analysis; assumptions were checked to ensure that they hold before subjecting the data to parametric tests. This ensured causality was established and deeper meaning and explanation for data patterns was established	
Ombati & Hirschshon (2018)	Managing Stakeholder Salience, Influence and Exposure with Sustainable Supply Chain Management Practices and Tripple	Transaction Cost Economics theory	Single case study embedded with four units of analysis namely community, telecoms regulator, corporate customers and suppliers. Data was collected from	Stakeholder with all the three attributes; power, legitimacy and urgency has a higher propensity to hold MaxTech accountable on its decisions than those stakeholders with	This study was limited in generalizability as the research was conducted in one cellular company	The present study overcame this gap as this study was a survey of Soft Drinks	

	Bottom Line Measure: The Case of Safaricom, Kenya	Resource Dependence theory Stakeholder theory Institutional theory	MaxTech management, community, regulators, corporate customers and suppliers using interviews. Data was analyzed by use of content analysis.	either only one two or attributes	(MaxTech) thus it cannot be assumed that the views of its stakeholders represents the views of stakeholders of other cellular firms.	Manufacturing firms in Kenya.
Ombati& Hirschsohn (2015)	To determine Stakeholder Salience and Firm's Accountability on Sustainable Supply Chain Management Practices: A Case of MaxTech, Africa	No theory	Single case study embedded with four units of analysis namely community, telecoms regulator, corporate customers and suppliers. Data was analyzed by use of content analysis	The more the number of attributes a stakeholder has, the more attention she is accorded and hence she has more influence on MaxTech's SSCM practices	Study relied on content analysis thus causality cannot be established as it merely describes the data. It can also not extract any deeper meaning or explanation for data pattern arising	Data was subjected to regression analysis; assumptions were checked to ensure that they hold before data was subjected to parametric tests. This ensured causality was established and deeper meaning and explanation for data patterns were established
Owusu-Bio, Muntaka and Bonsu (2016)	To investigate the impact of sustainable packaging practices on performance of the pharmaceutical industry in Ghana	No theory	Mixed method research where study employed a multiple case study and a survey. Sample size of 36 participants in Ghana's 4 locally-based manufacturers, 6	Stakeholders in the firms adhered to environmental standards set by the regulatory authorities as well as standards set for sustainable product packaging in Purchasing	The research was not grounded on any theory	This study applied several theories such as Natural Resource-Based view theory, stakeholder theory

			distributors, 16 retailers, and 5 health facilities found in the Ashanti Region. Statistical tools like the descriptive and inferential procedures were employed in analysing data collected	practices. little coordination and collaboration between manufacturers and downstream supply chain members		and Economic Approach theory
Kirunga & Kihara (2018)	Influence of Green Distribution practices on environmental performance of chemical manufacturing firms in kenya	Transaction Cost Economics theory Resource Dependence theory Stakeholder theory Institutional theory	Descriptive research design with target population of 27 chemical manufacturing companies in Kenya. Unit of observation was managers from Quality assurance section, Purchasing, stores and logistics section of each company. The study adopted a census survey method.	Green Distribution has a positive and significant correlation with environmental performance of chemical manufacturing firms in Kenya.	The study considered environmental performance which has been over-explored by researchers globally, regionally and locally.	This study adopted performance measures that have not been over-explored such as profitability, cost effectiveness and Market Share performance.
Yu, Tianshans and Ud Din (2018)	To determine the impact of Reverse Logistics on operational performance in China	No theory	Data was taken from supply chain specialist of pharmaceutical companies located in Mumbai, India during January to April 2017. Linear regression technique adopted to test hypothesis	Reverse Logistics has a significant and positive relationship with performance (operation, financial and environmental)	Regression was the main analysis method but assumptions were not checked	Data was subjected to regression analysis and assumptions were checked to ensure that they hold before data was subjected to parametric tests.
Yusuf (2020)	To assess the effect of Green Distribution on the	No theory	Exploratory research design on 943	Green Distribution has a positive and significant	Variables moderating the	Study explored moderating variable

	Performance of Manufacturing firms		manufacturing firms, Nairobi and Kiambu counties, Kenya registered by KAM	influence on performance of manufacturing firms	outcome of GD have not receive sufficient attention	that provided a more understanding of the strength of relationship between variables
Zailani, Shahrudin, Govindasamy, Ismail & Mahdzar(2015)	To assess the eco-efficiency practices of the sustainable packaging and its effect towards sustainable supply chain performance of manufacturing firms in Penang, Malaysia	Resource-based View (RBV) theory	Adopted a cross-sectional survey research design on a target population of 700 companies	Eco efficiency practices have a significant positive relationship with sustainable packaging. Sustainable packaging strongly influences supply chain performance of organizations	Variables moderating the outcome of GD have not receive sufficient attention	Study explored moderating variables thus established Zailani et al. (2015) findings.

Source: self-conceptualization, (2023)

2.4 The concept of firm Performance

Performance is a very used and dynamic concept that expresses the accomplishment of a given task with efficiency and effectiveness beyond present known standards. In the words of Freeman (1984), performance as the total value created by the firm through its activities, which is the sum of the utility created for each of a firm's legitimate stakeholders. Accordingly, firm performance has multiple facets and dimensions analyzed from Natural Resources-Based theory perspective (Hutoma et al., 2018), stakeholder theory perspective (Atambo & Omachar, 2016) or Economic Approach theory (Omusebe et al., 2017). Firm performance encompasses three specific areas of firm outcomes: financial performance (profits, return on assets, return on investment, etc.); product market performance (sales, Market Share, etc.); and shareholder return (total shareholder return, economic value added, etc.).

Thus, for this study, firm performance occurs when Market Share causes higher profitability as a result of Cost Efficiency. The overall firm performance (P) was the weighted mean of Cost Efficiency, Market Share and profitability. Indeed, the Natural Resource Based View (NRBV) theory explains why some firms are able to create a competitive advantage and superior performance. The NRBV has also been leveraged to explain the impact of GSCM practices on firm performance outcomes. In fact, the motive behind GSCM is to improve supply chain competitiveness while considering the availability and cost of external environmental resources in order to create value for firms through enhanced Cost Efficiency, profitability and Market Share (Barney, 2018).

To be said to be performing well, a Soft Drinks Manufacturing Firm must have met at least some interests of most or all of its stakeholders (DeMartini, 2018). Objectively, a firm's performance can according to Kazancoglu et al., (2018), be indicated by use of financial measures and non-financial measures. Even if it will be considered both financial and non-financial indicators/variables in order to measure firm performance at the end, when comparison are made, all the company's objectives and strategic goals can be translated and put into the financial statement (Taouab & Issor, 2019). The financial performance is both cause and effect (Taouab & Issor, 2019). Financial performance is considered as the crucial

factor by companies applying environmental management activities via more advanced management and control mechanisms for environmental risks, and the development of capacity and capability for continuous improvement (Mumtaz et al., 2018).

GSCM practices affects financial performance in terms of cost savings, improving product quality, increasing product price, increasing sales and profit margin, increasing Market Share and access to financial opportunities (Geng et al., 2017; Laari et al., 2018 and Younis et al., 2020). Some studies measure financial performance on the basis of the decrease in costs and expenditures as a result of internal and external green programs (Kazancoglu, 2018), while others prefer major economic indicators, such as profit or sales (Paulraj et al., 2017 & Laari et al., 2018). The findings of studies clearly indicate a relationship between financial performance and environmental management practices (Laari et al., 2018).

Some authors show that adopting GSCM practices improves performance, e.g. increase in sales, Market Share, or profits (Laari et al., 2018; Paulraj et al., 2017). While others show negative relationships (Islam et al., 2018). Implementing GSCM practices increase operational costs, and as a result, may negatively affect financial performance (Vanalle et al., 2017; Laari et al., 2018; Mumtaz et al., 2018 & Thanki & Thakkar, 2018). In contrast, GSCM practices can lead the company to cost savings, opportunities to enter new markets and the productive usage of waste (Kazancoglu et al., 2018). This study will utilize financial measurements, which will include profitability, operational costs and Market Share. The extent to which each of the measures of profitability, Cost Efficiency and Market Share will be fulfilled will be captured using a 5-point Likert type scale.

2.4.1 Profitability

Profitability is defined as the firm's ability to generate profits at certain period (Kartiningsih & Daryanto, 2020). The company's ability to generate profits from operating activities is the main focus in the company's performance appraisal (company fundamental analysis) because it can be indicator of the firm's ability to fulfill its obligations to its funders and it can be used to predict the financial condition of company in the future. Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run. So, measuring current and past profitability and projecting future profitability

is very important. Profitability is measured with income and expenses (Kartiningasih & Daryanto, 2020). Income is money generated from the activities of the business. Expenses are the cost of resources used up or consumed by the activities of the business. Profitability is measured with an “income statement.” This is essentially a listing of income and expenses during a period of time (usually a year) for the entire business. Increasing profitability is one of the most important tasks of business managers. Managers constantly look for ways to change the business to improve profitability (Kartiningasih & Daryanto, 2020). One of the ways to change the business to improve profitability is through the adoption of GSCM practices. Therefore, for the purposes of this study, the dimension of profitability as an indicator of firm performance and a consequence of GSCM practices was defined as profitability in this study.

Firm’s productive cash flow level, firm’s growth from profit, sales growth rate, amount of money earned by the firm relative to the amount of money spent by the firm and ability of the firm to internally fund the business are the indicators of profitability (Kazancoglu et al., 2018). The fulfillment of these indicators was captured using a five-point Likert scale.

2.4.2 Cost Efficiency

Efficiency is defined as a measure of how well resources are employed (Lofti et al., 2020). A key step in value generation for the firm is based on cost reductions and efficiency improvements (Alabi et al., 2020). Cost Efficiency is very important in this new age since profitability continues to shrink and new business is becoming almost impossible. Measuring firms’ efficiency is the comparison of the resources that are used for operations, against the outcomes that are derived and expected from the resource usage (Lofti et al., 2020). Improving Cost Efficiency is a primary performance objective of firms (Pushina et al., 2020). This is accomplished through the reduction of operating expenses, the efficient use of fixed capital, and the efficient use of working capital, while meeting or exceeding a necessary level of customer service (Batchimeg, 2017). These are achieved to a large extent through reduction of cost of inputs, lowering of cost of energy and water, reduction of waste management cost and reduction of hazardous material management cost reduction of environmental related liability cost, reduction of cost of storage, improvement of delivery time, reduction of cost of transportation and reduction product cycle time in the

manufacturing firms (Lofti et al., 2020). In essence, efficiency may result when wastes are reduced or eliminated; ideally resulting in reduced costs (Lofti et al., 2020). Therefore, for the purposes of this study, the dimension of efficiency as an indicator of firm performance and a consequence of GSCM practices was defined as Cost Efficiency in this study.

The extent to which a firm achieves reduction of waste management fees, input cost reduction due to recycling, energy cost reduction, environmental liability cost reduction and transport cost reduction are the indicators of Cost Efficiency (Cousins et al., 2019). The fulfillment of these indicators was captured using a five-point Likert scale.

2.4.3 Market Share

Market Share is a measure of the relative size of a business with respect to other participants in the market. Market Share is a fair and reasonable measurement as it compares a firm's performance with the total industry sales rather than with the performance of the best rivals (Ratnatunga, 2020). Market Share goal is easier to establish and operationalize than profit/sales goals because of confidentiality and availability of data. The importance of monitoring Market Share movements is highlighted by the sobering fact that whilst all the internal marketing ratios of a firm are favorable, a company could still be losing ground when compared to the competitors, due to the market as a whole growing faster than the firm (Ratnatunga, 2020). A company may in these circumstances see its Market Share falling in spite of a high performance against standard. Therefore, in order to adjust performance standards considering the influences of the external environment, a controller must track the company's Market Share (Batchimeg, 2017). Measuring firms Market Share is the ratio of dollar sales by a business in a given time period to total sales by all competitors in the same market. The 'market' includes all of the products or services, customer types, and geographic areas that are directly related to the activities of the business. For example, it includes all products and services that are competitive with those sold by the business. Improving Market Share is a primary performance objective of firms (Batchimeg, 2017). This is accomplished through high market power, economies of scale, experience curve and good quality of management (Ratnatunga, 2020). These are determined to a large extent by relative price,

relative quality, relative product breadth and relative emphasis on new products, relative sales force and market attractiveness (Ratnatunga, 2020).

The extent to which the firm has experienced increase in sales volume of products, firm's sales in relation to industry sales, percentage of consumers who prefer firm's brands over competitors' brands (share of presence), firm's product brands visibility and presence in the market (share of voice), and percentage of firm's total revenue generated through distribution channels (share of distribution) are the indicators of Market Share. The fulfillment of those indicators was captured using a five-point likert scale.

2.5 The concept of Green Supply Chain Management Practices

Green Supply Chain Management (GSCM) is the unification of environmental facet with the conventional supply chain. According to Banik et al., (2020), GSCM practices encompasses intra and inter-firm management of the upstream and downstream supply chain through internal and external GSCM practices seeking to diminish the overall environmental impact of both the forward and reverse flows. The advancing relevance of GSCM practices ensues mainly from dwindling raw materials sources and soaring pollution and most significantly unsatisfactory organizational performance (Abdellatif & Graham, 2019). Evidently, GSCM practices are extremely wide-ranging thus the measures of GSCM practices relies on the researcher's intent.

Environmental footprints of SDMFs are related not only to inbound and outbound but also Reverse Logistics (Demartini et al., 2018). Thus, GSCM is set out to incorporate environmental requirements in decisions making at each upstream logistics stage of material management till downstream logistics stage of physical distribution and closing the-loop concept of Reverse Logistics (Aslam et al., 2019). These practices have turned into a welcomed proposition to managing firms. Xie et al. (2022) postulate how paramount it is to augment the scope of GSCM as well as pinpoint variance of GSCM practices across industries. The Soft Drinks industry literally comprises two crucial manufacturing systems that, taken on the whole, bring Soft Drinks to the market. These two systems comprise: (1) concentrate and flavoring syrup manufacturing and (2) Soft Drinks manufacturing. The

supply chain depends heavily on the syrup producer, considering it is the driver for the bulk of downstream operations.

Most of the bottled Soft Drinks follow a similar product life cycle, moving from producer of syrup to bottler, then to distributor (if used), to merchant, to final consumer. The eccentric nature of the Soft Drinks supply chain implies that conventional GSCM practices are applicable, or are very effective (Demartini et al., 2018; Raihan et al., 2022). With the development in environmental awareness, matters of GSCM and environmental degeneration must be consolidated via supplier evaluation based on their environmental performance (inbound logistics), developing ecologically sound products as well as packaging (outbound logistics), take the edge off carbon emissions related with product distribution (outbound logistics) and eco-Reverse Logistics management (Yassine, 2022). Backing this novel perspective of GSCM practices, four dimensions were set on to be included in this research: Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics as supported by Nyariaro, 2017; Demartini et al., 2018; Lodorfos et al., 2018 and Bor, 2021.

2.6 The concept of Stakeholder Pressure

Freeman (1984) defined a stakeholder as: ‘Any group or individual who can affect or [be] affected by the achievement of an industry or organization’s objectives. This definition shows the important bi-directionality of stakeholders – that they can be both affected by – and can affect – an industry or \organization (Freeman et al., 2021). Organizations have many stakeholders and some with conflicting interest (Saleem et al., 2020). Thus, responding to the needs of all the stakeholders defeats logic. The first important aspect of stakeholder theory is, therefore, to recognize that stakeholders exist and that the complexity and range of stakeholders relevant to an organization will depend on that organization’s activities (Martin & Philip, 2021).

Different stakeholder groups place different demands and expectations on companies and companies respond in heterogeneous ways in accordance with the power, legitimacy and urgency with which they regard a particular demand (Moyo et al., 2020). These pressures can be categorized as coercive and non-coercive (mimetic or normative pressures) within

the external environment and they are normally targeted at a group of companies within a particular industry as opposed to an individual company (Adomako & Tran, 2022).

The main stakeholder source of coercive pressures is regulators, but pressure may also derive from powerful firms within the industry who exert a degree of political influence or other external stakeholders such as customers and suppliers (Boaventura et al., 2020). A number of environmental legislations have emerged in recent years, pressuring companies to comply with certain standards in terms of the environmental impact of their production processes. Non-compliance may result in penalties or fines for companies, so it is in their interest to meet the requirements of these groups who are pressuring them in a somewhat coercive manner (Jermisittiparsert, 2019). However, concerns have been raised about the effectiveness of this pressure source in achieving long term solutions that improve the environmental impact of firms. If companies are constantly responding to coercive pressures, they may be pushed towards practicing validation rather than practice improvement (Martin & Philip, 2021).

Non-coercive pressures can be mimetic or normative in nature (Parnell et al., 2018). Mimetic pressures mainly arise from a company's perception of their competitors' success resulting from certain practices (Esterhuyse, 2019). As the number of competitors adopting environmental practices increases, there is pressure for other companies within the same market to follow suit (Saleem et al., 2020). A company may seek to imitate these practices to reduce risk and achieve legitimacy by following the lead of companies they perceive as successful, or because they do not fully understand the requirements for sustained success themselves (Freeman et al., 2020). Normative pressures arise from industry or sector members attempting to define the way in which productive activity should be conducted within their area (Boaventura et al., 2020). This results in the development of sets of expectations for specific organizational contexts which are transferred through inter-organizational channels to the point where they become shared norms (Rui & Lu, 2020). Companies within organizational contexts affected by these norms will seek to conform to them in order to maintain their legitimacy (Freeman et al., 2021).

Although the normative perspective of stakeholder theory considers all stakeholders to have interests with intrinsic values regardless of their impact on the organization's performance, the strategic perspective of stakeholder management focuses on the relationships that are relevant for improving performance (Freeman et al., 2020). Thus, the strategic view of stakeholder theory suggests that organizations can create more value by distributing it to stakeholders that are relevant for organizational goals (Boaventura et al., 2020). SDMFs have a particularly complex set of stakeholders and neglecting stakeholder relationships may lead to limited success and insufficient value creation (Demartini et al., 2018).

Backing this novel perspective of Stakeholder Theory, three stakeholder pressure were set on to be included in this research: Regulatory Pressure, Customer Pressure and Competitive Pressure as supported by Demartini et al (2018).

2.7 Conceptual Framework on moderating role of stakeholder pressure on the relationship between GSCM practices and performance of SMFs in Kenya

The principal objective in this research was thus to examine the moderating role of stakeholder pressure on the relationship between GSCM practices and performance of SDMFs as guided by the NRBV theory. NRBV approach focuses on the valuable resources of the organization, which in turn, impacts long-term survival. Stakeholders are an important resource to firm's performance given that their pressure unequivocally improves the effect of adopting GSCM practices which in turn impact performance. In this regard, both GSCM practices and stakeholders are frugal resources that may be leveraged by a firm to alleviate outcomes. The NRBV theory expounds that firms may utilize their available resources (in this case GSCM practices and stakeholders) to improve their outcomes. This theory provides support for Stakeholder theory which focuses on the management of the natural business environment, its relationships and the promotion of shared interests, which, in turn, impacts long-term survival (Haleem et al., 2022). Stakeholder theory suggests firms increasingly implement sustainability practices based on the requirements of various groups of stakeholders (e.g. regulators, competitors and customers), and these practices are influenced by the strong belief that stakeholders progressively favor firms with an outstanding sustainability performance. The theory also provides support of the Economic Approach

theory that proposes that significant performance can result from GSCM practices. GSCM practices lead to improved financial performance by focusing resources to develop capabilities to deploy environmental practices to achieve environmental goals (Cousins et al., 2019). The theory informed the interaction between GSCM practices and performance of SDMFs in Kenya.

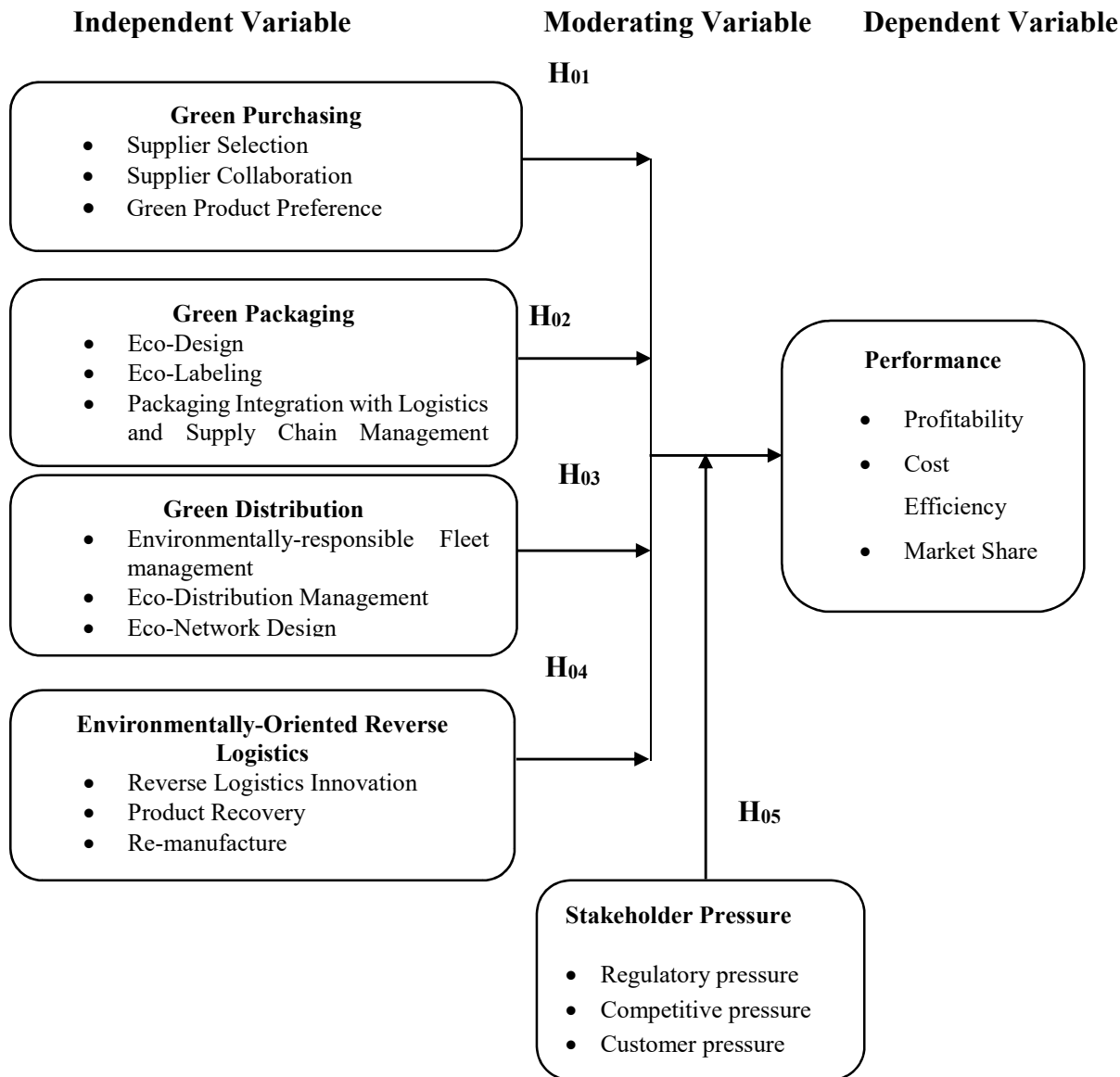


Figure 2. 1: Conceptual Framework showing relationship between GSCM practices, stakeholder pressure and performance

Source: (Adopted from Hart, 1995; Freeman, 1984)

A conceptual framework is a system of concepts, assumptions, expectations, beliefs and theories that supports and informs research diagrammatically or graphically (Robson & McCartan, 2016). The independent variables for the study was Green Supply Chain Management (GSCM) practices while the dependent variable was Firm Performance. Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics operationalized Green Supply Chain Management (GSCM) practices. Supplier Selection, Supplier Collaboration and Green Product Preference measured Green Purchasing; Eco-Design, Eco-Labeling and Packaging Integration with Logistics and Supply Chain Management measured Green Packaging; Environmentally-Responsible Fleet Management, Eco-Distribution Management and Eco-Network Design measure Green Distribution; Reverse Logistics Innovation, Product Recovery and Re-manufacture measured Environmentally-Oriented Reverse Logistics while Regulatory Pressure, Competitive Pressure and Customer Pressure operationalized Stakeholder Pressure. Finally, Profitability, Cost Efficiency and Market Share were used to assess the level of organizational performance.

CHAPTER THREE: RESEARCH METHODOLOGY

Research methodology refers to the overall approach to the research process. The chapter begins by giving an overview of the research philosophy, approach, design and methods used to address the research problem as outlined in Chapter One. This is followed by sections discussing research design, target population, sampling techniques, data collections, pilot testing for reliability and validity, measurement scales and data analysis. Ethical considerations for the study are further explained.

3.1 Research Design

The genesis of a research design is the research philosophy. The study adopted pragmatic philosophy which focuses on the practical consequences of social reality. It appreciates the use of multiple methods, different world views, assumptions, and forms of data collection and analysis that meet the researcher's objective and allows for both scientific objective rigor and contextual inter-relational exploration (Creswell & Creswell, 2018). Further, choice of pragmatism is cemented on its adoption in previous works (Jia, 2022; Omai, 2019) and drawn meaningful conclusions, therefore showing evidence of adopting the philosophy.

The study adopted a mixed methods survey design. Fraenkel & Wallen (2009), reasons that mixed methods design is best suited where the researcher collects and analyses both quantitative and qualitative data to understand a research problem within the same study. Creswell & Creswell (2018) writes that mixed methods research draws on potential strengths of both qualitative and quantitative methods, allowing researchers to explore diverse perspectives and uncover relationships that exist between the intricate layers of research questions. Several related studies have employed the same research design (Altaf et al., 2010), and deduced meaningful conclusion, hence justification of the design for the current study.

3.2 Study area

The study was conducted in Soft Drinks Manufacturing Firms in Kenya. These firms are located in various counties in Kenya which include Kiambu (7 SDMFs), Kisii (1 SDMF), Kisumu (1 SDMF), Machakos (4 SDMFs), Mombasa (8 SDMFs), Nairobi (65 SDMFs), Nakuru (2 SDMFs), Nyeri (2 SDMFs) and Uasin Gishu (2 SDMFs) counties. The study focused on SDMFs because different trends are currently affecting this industry spanning from the growing consumption of quality products, challenges due to legislation and compliance to standards, the high complexities due to the huge packaging variety; meager recycled content of plastic bottles, increase in price of raw materials and high GHG emission as a result of transporting and refrigerating billions of Soft Drinks daily (Chalabi, 2019; Lodorfos et al., 2018)

3.3 Target population

The population of interest consisted of all Chief Executive officers (CEOs) and senior managers in 5 departments: Supply Chain, Safety and Environment, Production, Finance and Marketing of each SDMF registered under the Kenyan Association of Manufacturers (KAM). As at September 2022, there were 92 SDMFs registered, from which 5 managers were drawn from each for questionnaire filling and 1 CEO from each for interviewing, making a population of 460 managers and 92 CEOs. This was the target population. Therefore, 460 managers were issued with a structured questionnaire while 92 CEOs provided data through interview schedules. In arriving at the population, a census survey technique was employed, where all the 460 senior managers & 92 CEOs were used. Census was appropriate since the size of the target population has the particular set of characteristics that the study is interested in and the target size is parsimoniously small (Nyang'au, 2017). This study resonates with O'Hare (2019) who stated that where the population is less than 1,000, a census survey is recommended to achieve statistical confidence in the survey results.

All the participants were chosen of the same job description and selected from the top of the managerial structure of the SDMFs. From the population of 92 firms making up 460 managers and 92 CEOs, 9 firms were piloted to ascertain validity and reliability of the questionnaire, all the remaining 83 firms, making 415 managers were surveyed for final data

collection. The study primarily used individual firms in the Soft Drinks manufacturing sub-sector as a unit of analysis. Similar past studies have also considered Soft Drinks Manufacturing firms (Bor, 2021; Nyariaro, 2017; Lodorfos et al., 2018; Demartini et al 2018; Muhammad et al., 2018 and Mochama & Muturi, 2019). This study combined issues related to the environment (green issues) with business aspects (supply chain). Therefore, the appropriate person from which the required data could be obtained should ideally have knowledge about the two aspects.

The choice of departmental senior managers and CEOs as units of observation in the study was based on the key attributes: knowledge of aspects of GSCM practices implemented by their firms respectively, knowledge on firm performance and knowledge of key stakeholders and their behaviour. In addition, the perceptions of individuals in top management echo the collective perspective of the firm and therefore their responses to subjective questions on firm level data are likely to be highly reliable. Mantgomery (2017) establishes that key respondents should be individuals with detailed knowledge of what is being studied and should be willing to communicate this information. Furthermore, information received from CEOs was meant for triangulation in order to reduce research bias emanating from a single method use, thus enhancing validity by approaching the same topic with different tools.

Within the population of 92 CEO's, interviews were conducted until saturation of discursive patterns was achieved and additional data could not lead to any new emergent themes. 20 participants formed the sample size as determined by saturation and as supported by Guest et al., 2020 and Saunders et al., 2018 who maintained that the experience of most qualitative researchers conducting an interview-based study with a fairly specific research question is that little new information is generated after interviewing 20 people or so belonging to one analytically relevant participant 'category'. Previous scholarly works (Namey et al., 2016; Hagaman & Wutich, 2017 and Hennink et al., 2019) are foundational in qualitative sample size estimation and give the same opinion. Guest et al. (2020) define saturation as the "point in data collection and analysis when new incoming data produces little or no new information to address the research question". In broad terms, saturation is used in qualitative research as a criterion for discontinuing data collection and analysis. Given the sample size

and the guidelines for achieving data saturation, saturation was attained. Additionally, it was needless to pilot the qualitative sample as Miles and Huberman (2010) stipulate that for qualitative studies, interviews are progressive in nature and the latter interviews are better than the former. Thus, the analysis of initial interviews assisted in improving the subsequent interviews.

3.4. Type and nature of data

Primary data was utilized for purposes of addressing the research objectives. Primary data is reliable and has more confidence level of decision-making with the trusted analysis having direct intact with occurrence of the events. The primary data sources were industry employees. Utilization of primary data to address study objectives is purposed to intensify the interpretive rationality and intensify communicative and pragmatic legitimacy of the investigation findings (Taherdoost, 2021). Primary data was collected on GSCM practices (Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics), stakeholder pressure (moderating variable) and also on firm performance indicators as shown in Table 3.1.

3.5 Data collection instruments

In order to collect quantitative data, a questionnaire, consisting of closed ended questions (see appendix V) was used. It was considered appropriate for this study since it allows responses to be gathered in a standardized manner which is easier to analyze and further provide access to a bigger group of respondents cost effectively (Charmaz, 2020). Questionnaire was prepared through a scopas and thorough literature search on variables. The instrument had four sections: Section A-Background Information (9 questions), Section B-Green Supply Chain Management practices (60 questions), Section C-stakeholder pressure (15 questions) and Section D-firm performance (15 questions). Close-ended questions measured on a 5-point Likert scale which consisted of GSCM practices, Stakeholder Pressure and performance statements were used. Respondents were asked to indicate the extent to which they agreed or disagreed with the statements by choosing one of the responses ranging from: Not at all at a scale of 1, Small extent at a scale of 2, Moderate extent at a scale of 3, Great extent at a scale of 4 and Greater extent at a scale of 5. Charmaz

(2020) reveals that 5-point Likert scale is one of the acceptable techniques for measurement of responses in a scientific way which allows the use of statistical tools to analyze data.

In order to collect qualitative data, an interview schedule, (see Appendix VII) was adopted. The data was collected from 20 CEOs of the Soft Drinks Manufacturing Firms. The interview was prepared through a scopas and thorough literature search on variables. An interview schedule is a formalized set of questions which are asked by an interviewer and filled in on the spot in an interaction with another person on a given topic (Busseto et al., 2020). According to Moser & Korstjens, (2018), “Interviews are a highly efficient way to gather rich, empirical data.” Semi-structured interview was conducted on 20 CEOs of the Soft Drinks Manufacturing Firms. The goal of a semi-structured interview is to gain structured information from the sources while maintaining an open conversation in order to obtain a wider perspective from the expertise of the interviewee.

3.6 Data collection procedure

A letter of authorization was sought from the University’s School of Post-Graduate Studies, Ethics and Review Committee and from the National Commission for Science, Technology and Innovation (NACOSTI) to conduct research. Once approval was given, the researcher obtained telephone numbers of all the Soft Drinks Manufacturing Firms registered by the Kenya Association of Manufacturers (2022) directly by visiting the firms and requested for contact details as well as from online sites like google and made the first contact. Thereafter, the researcher sought for the email addresses and telephone numbers of the target Participants (CEOs, senior managers of Supply Chain, Safety and Environment, Production, Finance and Marketing departments) of each firm from the first contact link to request permission to post an introduction letter to potential participants’ e-mail addresses. An invitation letter to take part in the survey was sent via e-mail to each potential participant. An informed consent form was required for each participant prior to participating. A questionnaire was the first tool to be administered in the study. The questionnaire was followed by interview that was used to close various gaps identified by the results of the questionnaire and to generate confirmatory results.

3.6.1 Quantitative data collection

The researcher collected the data for the study with the assistance of 5 research assistants. The questionnaire was administered via e-mail to the population of interest that comprised of five senior managers attached to the following five departments: Supply Chain, Safety and Environment, Production, Finance and Marketing of each of the Soft Drinks Manufacturing Firm. Email questionnaires were selected due to their cost effectiveness, fast transmission, flexibility, response turnaround and data accuracy as they are automatically transferred into CSV (Comma Separated Values) file. Considerable thought was given to the type of email questionnaire. A key factor was the large number of questions involved in the study which affected the length of the questionnaire. Previous research on both online and mail surveys emphasizes the relationship between length and response rate/quality. It is known that shorter questionnaires tend to attract more responses than longer questionnaires.

To overcome potential non-response for the study, two alternative forms of email questionnaire were considered: an email message carrying questions as an attachment and an email with a URL embedded in the message inviting potential respondents to click on the link and complete the questionnaire. The second option was chosen because the process of handling, completing and transmitting the questionnaire was simpler. Email messages carrying questionnaires as attachments require multiple steps on the part of the respondent and may discourage response. A URL-embedded questionnaire, on the other hand, seems less intrusive in that the potential respondent has the option of whether or not to visit the webpage to complete the questionnaire. Such an approach allows flexibility in font and layout, which encourages potential respondents. This is pertinent to both email and mail questionnaires. Although mixed results have previously been reported, it seems that questionnaire design may affect both response rates and response quality. However, a questionnaire's appearance may be greatly affected by the medium through which it is transmitted. In the case of email questionnaires, there are dangers in the research instrument appearing lengthy, plain or even unfriendly.

The questionnaire was designed using a Microsoft Word-friendly program (Kobo toolbox) which facilitated the completion process. The final research instrument did not take more than 20 minutes to complete. It was presented as a one-page document, through which respondents were able to scroll up and down. This minimized the waiting time required to

‘turn’ to the next page and made the questionnaire convenient to handle, easy and quick to complete. If presented in multiple pages, the questionnaire would have appeared longer. Consequently, potential respondents may have been discouraged. The layout of the questionnaire was carefully designed. Spaces were allowed between sections and questions. Closed-ended questions were widely used, employing two different types of response tags, including check boxes and text boxes.

The color and font of the questionnaire were chosen to appeal to potential respondents and to make the questionnaire appear friendly. Design features such as color and images can facilitate the completion task and lead to efficiency and increased data quality. The questionnaire included an introduction which informed the respondents about the study as well as giving instructions and notes for completion. Once published as a webpage, rigorous testing was undertaken to ensure that responses could be smoothly transmitted to the sender. Potential respondents received a URL address in the form of a hypertext link (<https://ee.kobotoolbox.org/x/6RuwoKoc>) included in an email message written by the researcher and forwarded by the researcher. The email explained the purpose of the study and invited recipients to click on the hypertext link (<https://ee.kobotoolbox.org/x/6RuwoKoc>), which then invoked the web browser, presenting the individual with the web-based questionnaire posted on an academic website. Once completed, questionnaires were transmitted anonymously to the sender. Responses were received by email in a format which enabled their transfer to Microsoft Excel and then SPSS.

A two-phased approach was employed to reach the 415 potential respondents. At the first phase, individualized mass e-mails were sent to a list of target respondents and within the next two weeks they were informed by telephone to fill and submit the questionnaire. The second phase started after four weeks from send date where a follow-up contact was made that included additional reminder phone calls and e-mails as reminders to respondents who may have not filled and submitted the questionnaire. This process was repeated after every two weeks for the next two months until the completed survey were received.

The questionnaire was launched on a weekday morning and four weeks were allocated for their return. An overwhelming 42 per cent of received responses arrived on the day of transmission. This is in line with Dibb et al. (2001) who found an equally high ‘same day response’ of 44 per cent, although Schillewaert et al. (1998) report a much lower figure of 15 per cent. High ‘same day responses may suggest that respondents decide fairly quickly whether or not they want to participate in the email survey. A steady and consistent rate of response was then received for the remainder of the eight weeks. By the end of this period, 91.1 per cent of the final responses had been received. Overall, the response climbed to 49.1 per cent. Although this was adequate to meet the statistical objectives of the research, it is generally lower than that reported in other email surveys. However, it should be noted that the type of email questionnaire used (an email with URL embedded) and the nature of the particular sampling frame, mean that the response rates are not directly comparable with studies using different recruitment methods (e.g. newsgroups posting, webpage hyperlinks) as well as different samples (e.g. students, academic etc.). Schillewaert et al. (1998) found out that different recruitment methods tend to attract different response rates and respondents’ profiles. Of all of the submitted questionnaires, 82.9 per cent were fully completed with no mistakes, indicating high response quality. Completion mistakes were generally avoided because the program used to design the questionnaire allowed greater control over the questionnaire layout. In addition, the type of tags employed enabled respondents to answer quickly and accurately, despite the length of the questionnaire.

The survey was carried out for a period of three months (November, 2022-January, 2023). Each questionnaire was sent with an introduction letter briefly explaining the objectives and importance of the study together with instructions on how to fill it.

3.6.2 Qualitative data collection

Face-to-face interviews were conducted with the CEOs of the Soft Drinks Manufacturing firms.. The eventual number of participants was 20, as conditioned by saturation (Guest et al., 2020). Each participant interview took place in a single interview session and each interview session lasted approximately 45 minutes. The interviews were performed at each Soft Drinks Manufacturing Firm’s location. The interviews were carried out for a period of

two months (February, 2023-March, 2023). All the 20 CEOs were given the interview schedule (approximately a week before their scheduled interview) via email with the intent to give ample time of response.

To ensure geographical representation, the researcher ensured at least 1-2 CEO(s) were interviewed in counties other than Nairobi County before proceeding to Nairobi County. This took care of the fact that there are regional differences in terms of implementation of environmental practices and stakeholder pressure that can make findings not to be generalizable (Noor, 2016). First, each CEO was asked to tell his/her understanding of GSCM practices. In the preceding part of the interview protocol, the CEOs were asked to describe how Green Procurement, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics impacted performance. The use of narrative interview approach was particularly adopted to evoke new and much exhaustive insights from the participants (Dyer 1994 and Steyaert & Bouwen 1997). Each participant was also asked to explain how stakeholder pressure (regulatory, competitive and customer pressure) impacted the relationship between GSCM practices and performance.

Memos were used to record any research thoughts that arose during and after each interview. Where the interviewee was comfortable, the interview was recorded electronically using a Voice Recorder. The audio recordings were carefully transcribed verbatim in a Microsoft Word document. Saunders et al. (2015) argued that it is essential to transform recorded interview into text formats as a way of controlling bias and to generate reliable data analysis. Where any interviewee was not comfortable with the audio recording, notes of the interviewer, testimonials and observations were merged to develop a solid material containing word-for-word transcripts as the resulting outcomes. Consequently, results of these interviews were in the form of narrative data.

3.7 Pilot Study

To ascertain reliability, validity and reduce measurement error, a pilot test was conducted. Connelly et al. (2016) says that a pilot study sample should be 10% of the sample projected for the larger parent study, thus 9 SDMFs, making 45 managers were randomly selected in Nairobi County for the pre-test of the research instrument (questionnaire) in Nairobi County.

Nairobi County was selected for the pilot study because approximately 70% of SDMFs registered by KAM in Kenya were located in Nairobi County at the time of the study. The firms and respondents who took part in the pilot study did not take part in the actual data collection. The pilot indicated a response rate of 80 per cent. The pilot test was carried out for a period of three weeks (from 2nd-21st October, 2022)

Roller (2020) espouses that the need for qualitative interviews to be piloted is not relatively obvious because as the interviews progress, the quality of the interview guide improves. Further, since participants were more difficult to find because of the nature of their work, a pilot study was not conducted prior to the actual research interviews. In addition, some interview questions were to be modified during the actual interviews. This flexibility supported the semi-structured, qualitative interview method that had been selected for data collection.

3.7.1 Instrument Validity test

In examining validity, two types were considered: content validity and construct validity (discriminant and convergent validity). Content validity refers to the ability of the research instrument to address the intended purpose so as to ensure that the participants understood and responded to the questions as required. It is whether a tool appears to be measuring what it says it does (Taherdoost, 2016). Content validity was achieved by discussions with four experts in the field of Logistics and Supply Chain Management and their opinions incorporated in the final measuring tool. One of the field experts was the researcher's supervisor, whose area of specialization is Logistics and Supply Chain Management, two of them were researcher's career mentors who specialized on environmental sustainability aspects in SDMFs, and one of them was a fellow PhD candidate in the field of Logistics and Supply Chain Management. These experts established that the items on the questionnaire had the ability to measure GSCM practices, Stakeholder Pressure and performance in developing country context. In addition, the pilot study respondents were requested to provide feedback regarding the clarity of organization, logic and length of the questionnaire. Based on the respondents' feedback, redundant and ambiguous items were modified or

eliminated and new items were added where necessary thus helped in refining the data collection instrument.

Construct validity is the extent to which an instrument measures the trait or theoretical construct that it is intended to measure (Taherdoost, 2016). To confirm construct validity of the measures, Exploratory Factor Analysis (EFA) with Varimax rotation was adopted. A total of 60 items on GSCM practices, 15 items on Stakeholder Pressure and 15 items on performance were subjected to Exploratory Factor Analysis (EFA), using Principal Component Analysis. According to Costello and Osborne (2005), Principal Component Analysis is a data reduction technique used to reduce the dimensionality of large data sets. The first step was to ensure that the dataset was suitable for Exploratory Factor Analysis. Of most importance in the study variables was to determine whether there were patterned relationships among variables and the divergence of factors or constructs. This was confirmed using the correlation matrix Kaiser's criterion. Correlations below 0.2 are considered unfit for Exploratory Factor Analysis and as such, they were excluded at the second analysis after detection. Low correlation coefficients were excluded since they indicated lack of patterned relationships. In addition, correlations above 0.9 indicate presence of Multicollinearity. There were no correlations above 0.9 hence there was no any form of Multicollinearity. A follow up to confirm lack of multicollinearity was established through the determinant value of 0.002, which is above 0.00001. In addition, Bartlett's Test of Sphericity significant level (<0.05) confirmed that the data had patterned relationships as shown in Table 3.1.

Table 3. 1: Kaiser-Meyer-Olkin & Bartlett's tests for the Study Instrument

Variable	Kaiser-Meyer-Olkin Measure of Sampling Adequacy. Chi-Square		Values & Sig
Green Purchasing	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.869
	Bartlett's Test of Sphericity	Approx. Chi-Square	7295.726
		Df	105
Green Packaging	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.756
	Bartlett's Test of Sphericity	Approx. Chi-Square	7257.313
		Df	105
Green Distribution	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.888
	Bartlett's Test of Sphericity	Approx. Chi-Square	4165.221
		Df	105
		Sig.	.000

Environmentally Responsible Fleet Management	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.812
	Bartlett's Test of Sphericity	Approx. Chi-Square	4517.549
		Df	105
Stakeholder Pressure	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Sig.	.000
			.781
		Approx. Chi-Square	5070.429
Performance	Bartlett's Test of Sphericity	Df	105
		Sig.	.000
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
		Approx. Chi-Square	4417.549
	Bartlett's Test of Sphericity	Df	105
		Sig.	.000

Source: (Field Survey Data, 2023)

The data was also tested for suitability of Exploratory Factor Analysis by checking the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy value, which is above the cut off value of 0.5, in this case the values ranges between 0.756 and 0.888, indicating that the data met the requirement for factor analysis for all the instruments. If this requirement is not met, it implies that distinct and reliable factors cannot be produced. However, the requirement was met (Hair et al., 1998; Guadagnoli & Velicer, 1988).

After testing these assumptions, the findings on both factor correlation matrices to check for the presence of correlation among factors was carried out as well as the Varimax rotation. Correlations were chosen since they indicate both strength and direction among factors. The variance extracted between factors and also as per factors was then calculated. Component correlation coefficient squared was also calculated. Finally, a comparison of the variance extracted between components as well as the component correlation coefficient squared was compared. The findings are shown in the subsequent tables for the respective study instruments, starting with Green Purchasing, Green Packaging, Environmentally-Oriented Reverse Logistics, Stakeholder Pressure and Performance

Table 3. 2: Factor Correlation Matrices Between Factors for Scale instruments

Factors, Correlations, Significance				
Factor Correlation Matrix for Green Purchasing				
Factor	1	2	3	
1	1.000	.099	.136	
2	.099	1.000	.371	
3	.136	.371	1.000	
Factor Correlation Matrix for Green Packaging				
Factor	1	2	3	4
1	1.000	.287	.282	.364

2	.287	1.000	-.001	.202
3	.282	-.001	1.000	.124
4	.364	.202	.124	1.000
Factor Correlation Matrix for Green Distribution				
Factor	1	2	3	
1	1.000	.314	-.099	
2	.314	1.000	.279	
3	-.099	.279	1.000	
Factor Correlation Matrix for Environmentally Responsible Fleet management				
Factor	1	2	3	4
1	1.000	.603	-.125	.039
2	.603	1.000	.006	.071
3	-.125	.006	1.000	-.283
4	.039	.071	-.283	1.000
Factor Correlation Matrix for Stakeholder Pressure				
Factor	1	2	3	4
1	1.000	.003	.015	.056
2	.003	1.000	.009	.071
3	.015	.009	1.000	-.183
4	.056	.071	-.183	1.000
Factor Correlation Matrix for Performance				
Factor	1	2	3	4
1	1.000	.210	-.042	.535
2	.210	1.000	.529	.048
3	-.042	.529	1.000	-.325
4	.535	.048	-.325	1.000
Extraction Method: Principal Axis Factoring.				
Rotation Method: Promax with Kaiser Normalization.				
Source: (Field Survey Data, 2023)				

The table 3.2 shows correlations between factors for all the scale instruments. A scan through the table above indicates that for Green Purchasing, the highest correlation was between factor 3 and factor 2 (.371), Green Packaging, the highest correlation matrix was between factors 4 and 2 (.364), Green distribution, the highest correlation was between factors 2 and 1 (.314), Environmentally oriented reverse logistics, the highest correlated factors was between factors 2 and 1 (.603). In stakeholder pressure, the highest correlated factors were between factor 4 and factor 2 (.071). Correlations between factors for firm performance recorded the highest between factors 4 and 1 (.535). This implied that correlations between factors for all instruments were below 0.7, indicating that divergent validity was achieved as suggested by (Conway & Huffcut, 2003).

Table 3. 3 Factor Loading

Componen t	1	2	3	4	5	6	7	8	9	10	11	12
SECB91			.408									

Factor correlation matrices within the extracted factors show an average variance with variances ranging between 0.613 and 0.904 which are higher than any of the correlation coefficient in the correlation matrix table. The high average loading per factor confirms the presence of convergent validity. However, all the variance extracted between components, that is, the average factor loadings is higher than the calculated correlation squared of any of the factor correlation matrix. This confirms divergent validity and hence it can be concluded that the variance within each construct for the 15 components of Green Purchasing is explained by the items rather than the other construct.

Table 3. 4 Factor Loading for Stakeholder Pressure

Component	1	2	3
SECC1301		.984	
SECC1302		.827	
SECC1303		.682	
SECC1304		.691	
SECC1305		.408	
SECC1306	.805		
SECC1307	.976		
SECC1308	.953		
SECC1309	.817		
SECC1310	.462		
SECC1311			.941
SECC1312			.826
SECC1313			.492
SECC1314			.513
SECC1315			.753
Average Loading	0.802	0.718	0.705
Extraction Method: Principal Component Analysis.			
Rotation Method: Promax with Kaiser Normalization.			
a. Rotation converged in 19 iterations.			

(Field Survey, 2023)

Factor correlation matrices within the extracted factors show an average variance with variances which are 0.802 for regulatory pressure (factor 1), 0.718 for competitive pressure (factor 2) and 0.705 for customer pressure (factor 3) which are higher than any of the correlation coefficient in the correlation matrix table. The high average loading per factor confirms the presence of convergent validity. However, all the variance extracted between components, that is, the average factor loadings is higher than the calculated correlation squared of any of the factor correlation matrix. This confirms divergent validity and hence it can be concluded that the variance within each construct for the 3 components of performance (which include profitability, Cost Efficiency and Market Share) are explained by the items rather than the other construct.

Table 3. 5: Factor Loading for Performance

Component	1	2	3
SECD1401	.810		
SECD1402	.871		
SECD1403	.883		
SECD1404	.909		
SECD1405	.827		
SECD1406		.868	
SECD1407		.843	
SECD1408		.760	
SECD1409		.723	
SECD1410		.829	
SECD1411			.929
SECD1412			.895
SECD1413			.802
SECD1414			.528
SECD1415			.621
	.860	.805	.755
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 6 iterations.			

(Field Survey, 2023)

Factor correlation matrices within the extracted factors show an average variance ranging between 0.860 for factor 1, 0.805 for factor 2 and 0.755 for factor three which are higher than any of the correlation coefficient in the correlation matrix table. The high average loading per factor confirms the presence of convergent validity. However, all the variance extracted between components, that is, the average factor loadings is higher than the calculated correlation squared of any of the factor correlation matrix. This confirms divergent validity and hence it can be concluded that the variance within each construct for the 3 components of performance (which include profitability, Cost Efficiency and Market Share) are explained by the items rather than the other construct.

In qualitative research, validity is when a researcher uses certain procedures to check for the accuracy of the research findings (Creswell, 2014). It is based on the fact that validity is a matter of trustworthiness, utility, and dependability. The concepts of credibility, and transferability can be applied to test for validity in qualitative research (Mocănașu, 2020). Credibility is present when the research results mirrors the views of participants. It alludes to the confidence of the data and analysis process and spells out how study findings match reality (Wong & Yamat, 2020). The researcher decreased threats to credibility through an extensive literature review and also by incorporating comments from practitioners and academic experts in GSCM in the content of the instruments. Supervisors and peer

debriefing with other PhD candidates in the field of Logistics and Supply Chain Management checked the findings from the narrative interview to gain further feedback from the findings.

Transferability is the degree at which the study findings can be transmitted to other settings. The researcher used good rich, thick description (Charmaz, 2020) of GSCM practices, Stakeholder Pressure and performance of SDMFs, thus enabling other researchers to make decisions about suitability of the study findings to other settings. The participants (CEOs) were carefully selected through purposive sampling to ensure that they provided rich information on GSCM practices and performance. Further, adequate description of the thematic content analysis process was carried out. This aided in locating themes thus enabling other researchers to make decisions about suitability of the study findings to other settings. Additionally, a comprehensive picture about GSCM practices, Stakeholder Pressure and performance in the context of SDMFs was provided. The context of the study would inform readers of such contexts and allow them make use of the study findings in other contexts. Lewis and Ritchie (2003) explain that it is the judgment of the context which informs others of the transferability of the findings to other settings.

3.7.2 Instrument reliability test

Hair et al (2019) define reliability as the ability of a test to consistently yield the same results when repeated measurements are taken of the same individual under the same conditions while Moses & Yamat, (2021) define reliability as ‘the extent to which test scores are free from measurement error’. As random error increases, reliability decreases. Basically, reliability is worried about consistency in the generation of the findings and denotes the requirement that, at least in principle, another researcher, or the same researcher on another occasion, should be able to replicate the original piece of research and achieve comparable evidence or results, with same study population.

The most popular method of testing for internal consistency in the behavioral sciences is Cronbach alpha. Mohajan (2017) explains that Cronbach alpha is suitable in measuring variance attributable to the subject and variance attributable to the interaction between subjects and items. An alpha value of 0.70 and above indicates good reliability which is the

threshold (Mohajan, 2017). The study therefore used the Cronbach's alpha to test the internal reliability of the measures. Additionally, item to total correlation for all the indicators in the constructs was determined using SPSS version 24 to examine reliability of the measurement scale.

Table 3. 6: Cronbach's Alpha test for reliability

Variables	Number of Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Green Purchasing	15	36.7192	25.009	.844	.858
Green Packaging	15	37.6024	26.185	.604	.870
Green Distribution	15	36.4522	27.370	.738	.869
Environment Oriented	15	36.9053	27.392	.564	.873
Mean GSCM PRACTICES	60	36.9198	26.368	.927	.861
mean Regulatory Pressure	5	36.8153	24.586	.615	.870
mean Competitive Pressure	5	36.6127	25.788	.706	.865
Customers Pressure	5	36.7945	25.948	.467	.879
Mean Stakeholder Pressure	15	38.4381	32.298	.330	.818
mean profitability	5	36.5416	25.723	.714	.864
mean Cost Efficiency	5	36.1100	27.723	.386	.880
mean Market Share	5	37.0228	22.803	.791	.857
mean performance	15	36.5581	25.163	.965	.855
Overall Reliability	90				.871

(Source: Field Survey Data, 2023)

There was a total of 10 constructs for the study, from which all the Cronbach's alpha coefficients were above 0.7 threshold value. The overall reliability coefficient for GSCM practices was 0.861. Stakeholder pressure had an overall reliability coefficient of 0.879 while performance had an overall reliability coefficient of 0.855.

To assess reliability of qualitative data, Lincoln & Guba (1985) suggest that trustworthiness is important. Concepts of dependability and confirmability were used to ensure

trustworthiness. Dependability was achieved through triangulation and by ensuring that those interviewed have the experience to discuss the phenomenon the researcher sought to explore (Lincoln & Guba, 1985). Triangulation of data is of critical importance to the trustworthiness of the qualitative study findings. As the study unfolded and particular pieces of information became known, steps were taken to validate each information item against at least one other source (i.e. questionnaire) and a second method (i.e. interview schedule) (Heesen et al., 2019). Using a second method produced more accurate, comprehensive, and objective findings (Heesen et al., 2019). For this study, interviews findings and questionnaires findings were compared to ensure trustworthiness. Confirmability was achieved through constant comparative analysis. The use of constant comparative analysis was to ensure that systematic comparisons were made and that this research was to demonstrate the links between the analysis and resulting themes. Constant comparative analysis was to be critical in lending credibility to the themes that emerged from the data as the researcher was to be able to specifically highlight those codes and categories that were to have the analytical weight to be used in developing the themes.

3.8. Diagnostic Tests

In statistical analysis, all parametric tests assume some certain characteristic about the data, known as assumptions. Since data was subjected to regression analysis, the following assumptions were checked to ensure that they held before subjecting the data to parametric tests: test for normality (Goodness of Fit test), test for Linearity, test for Homoscedasticity, and test for Multicollinearity and the examination of the independence of errors. If any of these assumptions is violated (i.e., if there are nonlinear relationships between dependent and independent variables or the errors exhibit correlation, heteroscedasticity, or non-normality), then the forecasts, confidence intervals, and scientific insights yielded by a regression model may be (at best) inefficient or (at worst) seriously biased or misleading.

3.8.1 Normality Test

Normality test also known as Goodness of Fit test is used to determine whether the data sets are normally distributed with 0 mean, with 1 standard deviation and a symmetric bell-shaped curve (Saunders et al. 2018). It is assumed that the residuals of variables are normally

distributed, that is, the errors in the prediction of value Y (the dependent variable) are distributed in a way that approaches the normal curve. Normality was established through Kolmogorov-Smirnov test. The Kolmogorov-Smirnov test (K-S test) tests the assumption that the sample data are drawn from a normally distributed population. It tests the null hypothesis that the data came from a normally distributed population and the alternate hypothesis that the data came from a population that is not normally distributed.

Table 3. 7: Kolmogorov-Smirnov Test for Normality

	Kolmogorov-Smirnov ^a		
	Statistic	Df	Sig.
Performance	.031	256	.200 [*]

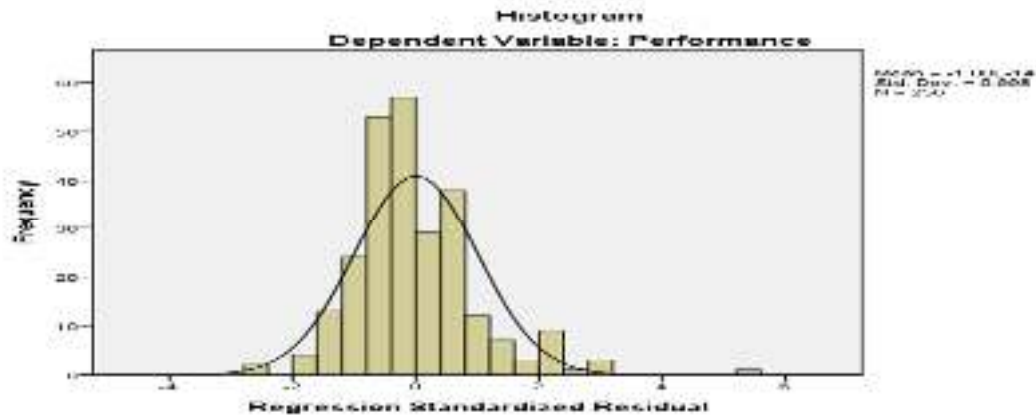
*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

(Source: Field Survey Data, 2023)

The results in Table 3.2 shows that the Kolmogorov-Smirnov test for Normality have significant values of more than 0.05. If the results of the test are significant that is $p < 0.05$ then rejecting the null hypothesis means rejecting the assumption of normality for the distribution (Tsagris & Pandis, 2021). In this case, we do not reject the assumption of normality and hence conclude that the data follows a normally distributed population.

However, the Kolmogorov-Smirnov for Normality is sensitive to the size of the sample; with a large sample even, small deviations from normality will be reported as significant. As a result, the test should always be used in conjunction with visual inspection of histograms and skewness and kurtosis measures. Skewness should be within the range ± 1.96 for the data to pass the normality test. Kurtosis values should be within range of ± 1.96 for the case the data was normally distributed.

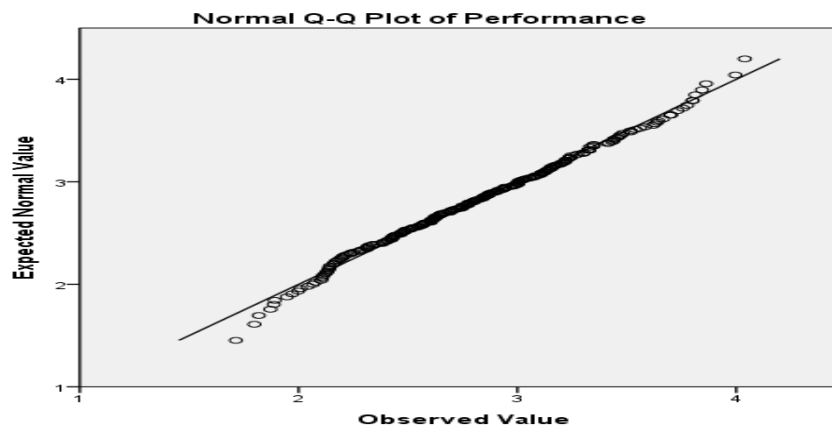


(Source: Field Survey Data, 2023)

Figure 3. 1: Histogram with Normal Probability Curve Test of Normality

Figure 3.1 shows a histogram with normal probability curve which is normally distributed with moderate kurtosis and without positive or negative skewness. This means that the data was normally distributed. This is confirmed that the assumption of normality was not violated.

This numerical test was further enhanced with the graphical test of Q-Q plots (Khatun, 2021). Based on the Q-Q plots, when the data is normally distributed, the data points are close to the diagonal line but when data points are scattered far from the line in a physical non-linear fashion, the data will be regarded as not normally distributed. Normality test using the Q-Q plot is presented as shown in Figure 3.2 below.



(Source: Field Survey Data, 2023)

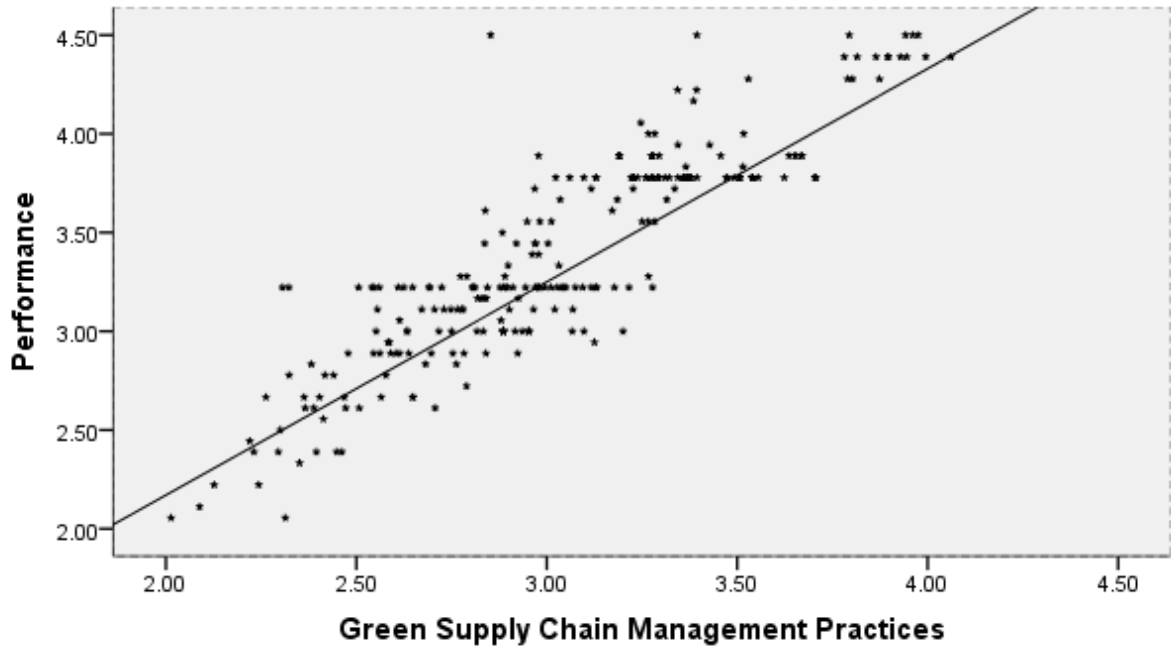
Figure 3. 2: Normal Q-Q Plot Test of Normality

The results show that the alignment of the points on the normal probability plot confirms to the expectations. The cigar shape or the straight line has points aligned closely from bottom left to top right implying no major deviation from normality. Since most of the points aligned along the straight line, the assumption of normality was not violated. This means that the data was normally distributed.

3.8.2 Linearity Test

Linearity means that the outcome (dependent) variable has a straight-line relationship with the predictor (independent) variable (Moosavi & Ghassabian, 2018). Keith et al. (2020) state that if linearity is violated, all the estimates of the regression (i.e. regression coefficients, standard errors and tests of statistical significance) may be biased. Further, if the relationship between the dependent and independent variable is not linear, the results of linear analysis will under or over-estimate the true relationship and increase the risk of Type I and Type II errors

Linearity was tested by creating a scatter plot using SPSS Statistics. The researcher plotted the dependent variable against the independent variable and then visually inspected the scatter plot to check for linearity.



(Source: Field Survey Data, 2023)

Figure 3. 3: Test of Linearity using Scatter Plot

The scatter plots had a straight-line indicating linearity of the data for regression model. Besides, most of the data points cluster along the straight line. Therefore, the assumption of linearity was not violated. This means that there was a linear relationship between GSCM practices and performance. Where the relationship displayed in the scatter plot was not linear, transformation of the data was done. The t-Test was used to examine whether there was some significant linear relationship between the independent and dependent variables (Kothari & Garg, 2014).

Table 3. 8: T-test showing linearity

Model	T	Sig.
(Constant)	.044	.965
Green Supply Chain Management Practices	31.691	.000

Source: (Field Survey Data, 2023)

The decision about the null hypothesis in a two-tailed test was taken by comparing the computed value and critical value of the distribution. Rejecting a null hypothesis means there was a significant linear relationship between the variables (Kothari & Garg, 2014).

3.8.3 Homoscedasticity Test

Homoscedasticity, or homogeneity of variances, is an assumption of equal or similar variances across all levels of the independent variables or in different groups being compared (Senarathne & Jianguo, 2020). It means that a DV's variability is equal across values of an IV. According to Keith et al. (2020), researchers assume that errors are spread out consistently between the variables, that is, variance around the regression line is same for all values of the predictor variable.

Homoscedasticity was minimized or eliminated where possible by ensuring that the data used in hypothesis testing was approximately normal. The data was accurately transformed and that the right functional forms of regression model were selected. Variables were then presented by scatter plot diagrams of the dependent variable (DV) widen or narrow as the value of the independent variable (IV) increases.

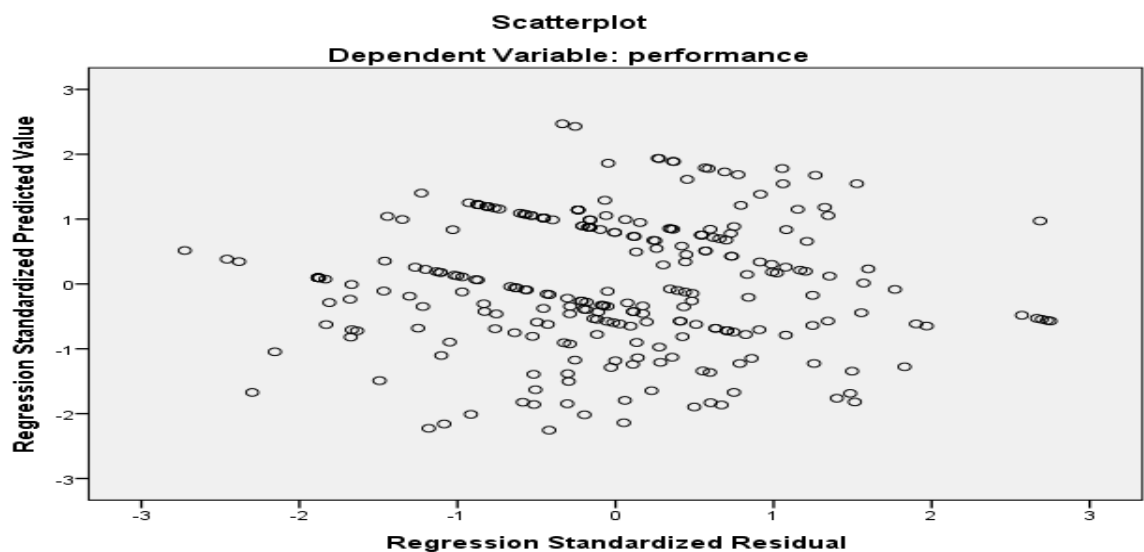


Figure 3. 4: Testing Homoscedasticity

Source: (Field Survey Data, 2023)

The inverse of homoscedasticity is heteroscedasticity which refers to a condition in which the variance of the residual term, or error term, in a regression model varies widely. Basing on the results indicated in Figure 3.4, there were no changes in the vertical spread among the

residuals across the figure from left to right. In this case, the vertical spread of the residuals is randomly distributed. There is no overall pattern in the variance of the residuals, meaning that there appear to be no evidence of heteroscedasticity; hence there is homoscedasticity.

Therefore, in this study, because there was no heteroscedasticity but instead there was homoscedasticity, the relationship between GSCM practices and performance of SDMFs in Kenya will remain the same if another random sample of data is taken from the same population. This implies that these study findings can be generalized to all the SDMFs in Kenya. At each level of the predictor variables(s), the variance of the residual terms should be constant. This was tested using P-P plots (Senarathne & Jianguo, 2020). A P–P plot is a type of graphical probability plot. It is applicable in testing heteroscedasticity besides the test for normality.

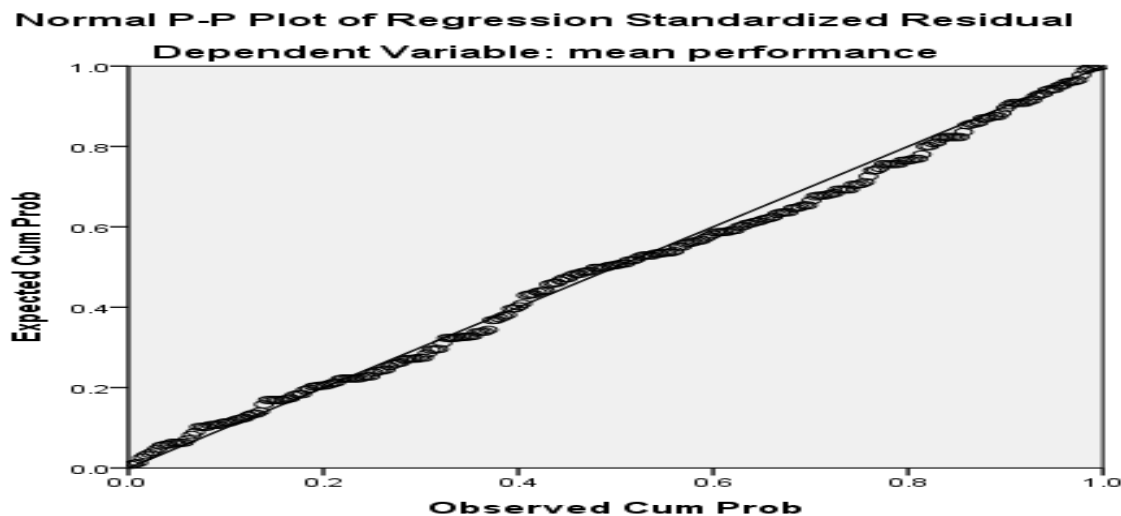


Figure 3.5: Testing Heteroscedasticity **Source: (Field Survey Data, 2023)**

The researcher observed the spread location and the plot showed that the residuals were spread equally along the ranges of predictors, which indicated that the data was deduced to be homoscedastic. However, if data was found to spread unequally along the range of the predictors, then it was to be heteroscedastic and thus subjected to transformation using methods like logs and/or Z scores.

3.8.4 Multicollinearity Test

Multicollinearity is said to occur if there exist high inter-correlations between independent variables (Young, 2021). It has to be dealt with because when it exists, it can wreak havoc on analysis and thereby making interpretations problematic. Multicollinearity can result in misleading and unusual results, inflated standard error and reduced power of the regression coefficients that create a need for larger sample sizes (Young, 2021).

Multicollinearity was dealt with by first establishing the inter-correlations between the independent variables and those bivariate correlations of 0.9 and higher were seen as good candidates for deletion (Shrestha, 2020; Young, 2021). This was achieved using Pearson Product Moment Correlation Coefficient as shown in Table 3.9 below.

Table 3. 9: Multicollinearity Test

		Correlations				
		Environme ntally- Oriented Reverse Logistics	mean stakeholder pressure	Green Purchasin g	Green Packaging	Green Distribution
Environmentally- Oriented Reverse Logistics	Pearson Correlation	1	.193**	.115	.323**	.075
	Sig. (2tailed)		.002	.067	.000	.232
	N	256	256	256	256	256
mean stakeholder pressure	Pearson Correlation	.193**	1	.159*	.049	.067
	Sig. (2tailed)	.002		.011	.432	.285
	N	256	256	256	256	256
Green Purchasing	Pearson Correlation	.115	.159*	1	.587**	.631**
	Sig. (2tailed)	.067	.011		.000	.000
	N	256	256	256	256	256
Green Packaging	Pearson Correlation	.323**	.049	.587**	1	.491**
	Sig. (2tailed)	.000	.432	.000		.000
	N	256	256	256	256	256
Green Distribution	Pearson Correlation	.075	.067	.631**	.491**	1
	Sig. (2tailed)	.232	.285	.000	.000	
	N	256	256	256	256	256

**. Correlation is significant at the 0.01 level (2tailed).

*. Correlation is significant at the 0.05 level (2tailed).

Source: (Field Survey Data, 2023)

Results shows that the highest correlation among the independent variables was ($r=.631$). Therefore, there were no correlations above 0.9. This means that using the correlations test, the assumption of collinearity was met. The VIF (Variance Inflation Factor) was conducted. The VIF for a predictor indicated whether there was a strong linear association between itself and all the remaining predictors. VIF is a reciprocal of the tolerance. Larger VIF greater than 10 indicated multicollinearity (Shrestha, 2020).

Table 3.10: Collinearity Diagnostics using VIF and Tolerance

Model		Collinearity Statistics	
		Tolerance	VIF
1	Green Purchasing	.329	3.040
	Green Packaging	.619	1.616
	Green Distribution	.507	1.973
	Environmentally-Oriented Reverse Logistics	.721	1.388
	Stakeholder pressure	.442	2.264
a. Dependent Variable: mean performance			

Source: (Field Survey Data, 2023)

From the results in Table 3.10, it is clear that all the Tolerance values are above 0.1 hence indicating lack of Multicollinearity. Likewise, the variance inflation factor values are below 10, implying that there was no violation of Multicollinearity. Therefore, the regression model did not violate the assumption of collinearity. In cases where the condition index was used, the criterion was to measure how ‘dependent’ one independent variable is on another. The variance proportions associated with each variable was observed and according to Young (2021), multicollinearity is present if the condition index is equal to or greater than 30 and at least two variance proportions for a particular independent variable are greater than 50.

3.8.5 Independence of errors Test

The Durbin-Watson statistic was used to examine the independence of errors. The assumption of independence is given by

$$D = \frac{\sum_{i=2}^n (e_i - e_{i-1})^2}{\sum_{i=1}^n e_i^2} \dots \dots \dots \text{Equation (3.1)}$$

where $e_i = y_i - a - bxi$ ($i = 1, 2, \dots, n$) are residuals.

A value of D between 1 and 3 is usually where $e_i = y_i - a - bxi$ ($i = 1, 2, \dots, n$) are residuals.

Table 3. 11: Test of Independence of Errors using Durbin Watson Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.921 ^a	.849	.846	.20910	1.581
a. Predictors: (Constant), Stakeholder pressure, Green Packaging, environment oriented Reverse Logistics, Green Distribution, Green Purchasing					
b. Dependent Variable: Performance					

Source: (Field Survey Data, 2023)

Results presented in Table 3.11 show a Durbin Watson value of 1.581. A value of Durbin Watson between 1 and 3 is usually considered to be accepted (Kothari & Garg, 2014). This means that there were no serial correlations and there was independence of errors. F-test was used to test the overall validity of the model or to test if any of the explanatory variables had a linear relationship with the response variable.

3.9 Data Analysis

3.9.1 Quantitative Data Analysis

The application of reasoning in order to have meaningful information is known as data analysis (Busseto et al., 2020). The filled questionnaires were downloaded from Google forms (Kobo Toolbox) in CSV format. The CSV file was then uploaded into SPSS computer software and was subjected to preliminary checks. Descriptive statistics gave the background information of the respondents, that is, the frequencies and their percentages. The findings

were presented by use of frequency distribution tables that gave record of a number of times a score or a response occurred.

Inferential statistics adopted multiple regressions, correlation analysis and moderated hierarchical multiple regression analysis models in order to determine the effect of the explanatory variables (GSCM practices) and the performance of SDMFs in Kenya. The significance of each independent variable was tested at a confidence level of 95% and was used to analyze the collected data. Owing to the existence of a moderator as the fifth variable, the moderated multiple regression analysis model was used to test and validate hypothesis H_{50} . Since the data arose from more than one variable, multivariate analysis was used to process the survey data results based on Likert scale evaluations that allowed statistical and graphical representation. Linear and multiple regression equations were developed and used in testing the hypothesized effects.

3.9.1.1 Correlation Analysis

To examine the correlation among independent variables, Pearson's Product moment correlation (r) model was adopted. The correlation coefficient measures correlation between variables by the r - value, where an r - value = 0 signifies lack of correlation with a value further away from 0 (towards -1 or +1) signifies stronger correlation. LeeRodgers & Nicewander (1988) show that a coefficient correlation above 0.9 indicated presence of high correlation among variables. The model

3.9.1.2 Model specifications

Objective One

In order to establish the effect of Green Purchasing (independent variable) on performance of the SDMFs (dependent variable), the study adopted standard multiple regression analysis. The study began by establishing the effect of Green Purchasing on each of the measures of performance (Profitability, Cost Efficiency, Market Share) through multiple regression means.

Green Purchasing on Profitability Performance

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_1 X_{12i} + \beta_1 X_{13i} + \varepsilon_i \dots \dots \dots (3.1)$$

Where;

Y_i	Profitability performance
β_0	The constant due to scale differences in measuring Profitability Performance, it is the value of Y when the X_1 is 0.
X_1	Is the independent variable, Green Purchasing
(1,2,3)	Are measures of the independent variable {Supplier Selection, Supplier Collaboration, Green Product Preference}
Epsilon, ε_i	Epsilon, represents the error component for each Entity. The portion of Y score that cannot be accounted for by its systematic relationship with values of X_1 , the predictor variable.

Green Purchasing on Cost Efficiency Performance

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_1 X_{12i} + \beta_1 X_{13i} + \varepsilon_i \dots \dots \dots (3.2)$$

Where;

Y_i	Cost Efficiency performance
β_0	The constant due to scale differences in measuring Cost Efficiency Performance, it is the value of Y when the X_1 is 0.

Green Purchasing on Market Share Performance

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_1 X_{12i} + \beta_1 X_{13i} + \varepsilon_i \dots \dots \dots (3.3)$$

Where;

Y_i	Market Share performance
β_0	The constant due to scale differences in measuring Market Share Performance, it is the value of Y when the X_1 is 0.

Green Purchasing on firm performance

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_1 X_{12i} + \beta_1 X_{13i} + \varepsilon_i \dots \dots \dots (3.4)$$

Y_i	Performance of SDMFs
β_0	The constant due to scale differences in measuring Firm Performance, it is the value of Y when the X_1 is 0.

Source: (Adapted from Wilson & Sa, 2006),

Subsequently, a standard linear regression model established the effect of Green Purchasing on performance bearing mean subscales of Green Purchasing (Supplier Selection, Supplier Collaboration and Green Product Preference) and the mean subscales of performance

$$Y_i = \beta_0 + \beta_1 X_{1i} + \varepsilon_i \dots \dots \dots (3.5)$$

Y_i	Performance of SDMFs
β_0	The constant due to scale differences in measuring Firm Performance, it is the value of Y when the X_1 is 0.

X_1 Is the mean subscales of the independent variable, Green Purchasing
Source: (Adapted from Wilson & Sa, 2006)

Objective Two

To determine the effect of Green Packaging (independent variable) on performance of SDMFs (dependent variable), the study adopted standard multiple regression analysis. Firstly, the study established the effect of Green Purchasing on each of the measures of performance (Profitability, Cost Efficiency, Market Share) through multiple regression models.

Green Packaging on Profitability Performance

$$Y_i = \beta_0 + \beta_1 X_{21i} + \beta_2 X_{22i} + \beta_3 X_{23i} + \varepsilon_i \dots \dots \dots (3.6)$$

Where;

Y_i Profitability performance
 β_0 The constant due to scale differences in measuring Profitability Performance, it is the value of Y when the X_2 is 0.
 X_2 Is the independent variable, Green Packaging
 (1,2,3) Are measures of the independent variable {Eco Labelling, Eco-Design and Packaging Integration with Logistics and Supply Chain Management}
 Epsilon, ε_i Epsilon, represents the error component for each Entity. The portion of Y score that cannot be accounted for by its systematic relationship with values of X_1 , the predictor variable.

Green Packaging on Cost Efficiency Performance

$$Y_i = \beta_0 + \beta_1 X_{21i} + \beta_2 X_{22i} + \beta_3 X_{23i} + \varepsilon_i \dots \dots \dots (3.7)$$

Where;

Y_i Cost Efficiency performance
 β_0 The constant due to scale differences in measuring Cost Efficiency Performance, it is the value of Y when the X_2 is 0.

Green Packaging on Market Share Performance

$$Y_i = \beta_0 + \beta_1 X_{21i} + \beta_2 X_{22i} + \beta_3 X_{23i} + \varepsilon_i \dots \dots \dots (3.8)$$

Where;

Y_i Market Share performance
 β_0 The constant due to scale differences in measuring Market Share Performance, it is the value of Y when the X_2 is 0.

Green Packaging on firm performance

$$Y_i = \beta_0 + \beta_1 X_{21i} + \beta_2 X_{22i} + \beta_3 X_{23i} + \varepsilon_i \dots \dots \dots (3.9)$$

Y_i	Performance of SDMFs
β_0	The constant due to scale differences in measuring Firm Performance, it is the value of Y when the X_2 is 0.

Source: (Adapted from Wilson & Sa, 2006)

A linear regression model established the effect of Green Packaging on performance bearing mean subscales of Green Packaging (Packaging Integration with Logistics and Supply Chain Management, Eco Labelling and Eco-Design) and the mean subscales of performance

$$Y_i = \beta_0 + \beta_2 X_{2i} + \varepsilon_i \dots \dots \dots (3.10)$$

Y_i	Performance of SDMFs
β_0	The constant due to scale differences in measuring Firm Performance, it is the value of Y when the X_2 is 0.

X_2 Is the mean subscales of the independent variable, Green Packaging

Source: (Adapted from Wilson & Sa, 2006)

Objective Three

The effect of Green Distribution (independent variable) on performance (dependent variable) was established through standard multiple regression analysis. Firstly, the study established effects of Green Distribution on each of the measures of performance (Profitability, Cost Efficiency, Market Share) through multiple regression models.

Green Distribution on Profitability Performance

$$Y_i = \beta_0 + \beta_3 X_{31i} + \beta_3 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.11)$$

Where;

Y_i	Profitability performance
β_0	The constant due to scale differences in measuring Profitability Performance, it is the value of Y when the X_3 is 0.
X_3	Is the independent variable, Green Distribution
(1,2,3)	Are measures of the independent variable {Environmentally-responsible Fleet management, Eco Distribution Management and Eco Network Design}
Epsilon, ε_i	Epsilon, represents the error component for each Entity. The portion of Y score that cannot be accounted for by its systematic relationship with values of X_1 , the predictor variable.

Green Distribution on Cost Efficiency Performance

$$Y_i = \beta_0 + \beta_3 X_{31i} + \beta_3 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.12)$$

Where;

Y_i	Cost Efficiency performance
-------	-----------------------------

β_0 The constant due to scale differences in measuring Cost Efficiency Performance, it is the value of Y when the X_3 is 0.

Green Distribution on Market Share Performance

$$Y_i = \beta_0 + \beta_3 X_{31i} + \beta_3 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.13)$$

Where;

Y_i Market Share performance

β_0 The constant due to scale differences in measuring Market Share Performance, it is the value of Y when the X_3 is 0.

Green Distribution on firm performance

$$Y_i = \beta_0 + \beta_3 X_{31i} + \beta_3 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.14)$$

Y_i Performance of SDMFs

β_0 The constant due to scale differences in measuring Performance, it is the value of Y when the X_3 is 0.

Source: (Adapted from Wilson & Sa, 2006)

A linear regression model established the effect of Green Distribution on performance bearing mean subscales of Green Distribution (Environmentally-responsible Fleet management, Eco Distribution Management and Eco Network Design) and the mean subscales of performance

$$Y_i = \beta_0 + \beta_3 X_{3i} + \varepsilon_i \dots \dots \dots (3.15)$$

Y_i Performance of SDMFs

β_0 The constant due to scale differences in measuring Firm Performance, it is the value of Y when the X_3 is 0.

X_3 Is the mean subscales of the independent variable, Green Distribution

Source: (Adapted from Wilson & Sa, 2006)

Objective Four

The effect of Environmentally-Oriented Reverse Logistics Practices (independent variable) on performance (dependent variable) was established through standard multiple regression analysis. Firstly, the study established effects of Environmentally-Oriented Reverse Logistics Practices on each of the measures of performance (Profitability, Cost Efficiency, Market Share) through multiple regression models.

Environmentally-Oriented Reverse Logistics Practices on Profitability Performance

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_4 X_{42i} + \beta_4 X_{43i} + \varepsilon_i \dots \dots \dots (3.16)$$

Where;

Y_i	Profitability performance
β_0	The constant due to scale differences in measuring Profitability Performance, it is the value of Y when the X_4 is 0.
X_4	Is the independent variable, Environmentally-Oriented Reverse Logistics practices
(1,2,3)	Are measures of the independent variable {Reverse Logistics Innovation, Product Recovery and Re-manufacture}
Epsilon, ε_i	Epsilon, represents the error component for each Entity. The portion of Y score that cannot be accounted for by its systematic relationship with values of X_1 , the predictor variable.

Environmentally-Oriented Reverse Logistics on Cost Efficiency Performance

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_4 X_{42i} + \beta_4 X_{43i} + \varepsilon_i \dots \dots \dots (3.17)$$

Where;

Y_i	Cost Efficiency performance
β_0	The constant due to scale differences in measuring Cost Efficiency Performance, it is the value of Y when the X_4 is 0.

Environmentally-Oriented Reverse Logistics on Market Share Performance

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_4 X_{42i} + \beta_3 X_{43i} + \varepsilon_i \dots \dots \dots (3.18)$$

Where;

Y_i	Market Share performance
β_0	The constant due to scale differences in measuring Market Share Performance, it is the value of Y when the X_4 is 0.

Environmentally-Oriented Reverse Logistics on firm performance

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_3 X_{42i} + \beta_4 X_{43i} + \varepsilon_i \dots \dots \dots (3.19)$$

Y_i	Performance of Soft Drinks manufacturing firms
β_0	The constant due to scale differences in measuring Firm Performance, it is the value of Y when the X_4 is 0.

Source: (Adapted from Wilson & Sa, 2006)

A linear regression model established the effect of Environmentally-Oriented Reverse Logistics on performance bearing mean subscales of Environmentally-Oriented Reverse Logistics (Reverse Logistics Innovation, Product Recovery and Re-manufacture) and the mean subscales of performance

$$Y_i = \beta_0 + \beta_4 X_{4i} + \varepsilon_i \dots \dots \dots (3.20)$$

Y_i	Performance of Soft Drinks manufacturing firms
β_0	The constant due to scale differences in measuring Market Share Performance, it is the value of Y when the X_3 is 0.

X_3 Is the mean subscales of the independent variable, Green Distribution
Source: (Adapted from Wilson & Sa, 2006)

Objective five

The last objective ascertained the moderating effect of stakeholder pressure on the relationship between GSCM practices and performance of SDMFs in Kenya. This was modeled in equation 3.21.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \varepsilon_i \dots \dots \dots (3.21)$$

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_m M_i + \varepsilon_i$$

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_m M_i + \beta_m M_i X_{1i} + \varepsilon_i$$

Where;

Y_i	is the dependent variable (firm Performance) and is a linear function of the moderating variable (stakeholder pressure, M) and the independent variable GSCM practices, X_{1i}) plus ε_i
β_0	Is the regression constant or intercept
β_1	Is the regression coefficient or change induced in Y (firm Performance) by X_{1i} ,
X_{1i}	Is the independent variable, GSCM practices
β_m	Is the regression coefficient or change induced in Y (firm Performance) by M ,
M	stakeholder pressure, is a moderator of the relationship between GSCM practices (X_{1i}) and firm Performance (Y)
β_m	Is the regression coefficient or change induced in Y (firm Performance) by the interaction term, $M_i X_{1i}$
$M_i X_{1i}$	Interaction term which represents the Moderating effect. It accounts for moderation in the model.
ε_i , Epsilon	Is a random variable, error term that accounts for the variability in Y_1 that cannot be explained by the linear effect of the i predictor variables

Source: (Adapted from Freund et al., 2006; Field, 2005)

A change in R^2 value of the interaction term explains moderations. The interaction effect depicts whether moderation is present in the model (Field, 2005). However, the predictor and the moderator must be included for the interaction term to be valid (Field, 2005)

3.9.2 Qualitative Data Analysis

Qualitative Data Analysis is the process of organizing, analyzing, and interpreting qualitative data, conceptual information and user feedback to capture themes and patterns (Kiger & Varpio, 2020). Thematic analysis was carried out to identify patterns and establish themes across the data to the responses given in the open-ended questions so as to derive meaning (Moser & Korstjens, 2018). The rationale for using thematic analysis was that it is not attached to a particular research paradigm (Joffe, 2012) hence was ideal for pragmatism paradigm and mixed method research. Moreover, thematic analysis can be used to develop theories and avoid the application of time-consuming axial coding process (Thomas, 2006). The researcher used inductive approach to conduct thematic analysis. Here, the researcher derived meaning and created themes from data without any preconceptions but instead allowed themes to emerge from the data. Having all interviews in hands, the transcribed data of the 20 interviews went through preparation and editing processes to make it ready for the analysis. The analysis followed Sefiani and Brown (2013) six step process as follows: -interview transcription, data familiarization, coding framework (affixing codes by data segmenting and labeling, development of categories, theme identification) collapse codes to develop themes by aggregating similar codes together, theory development and incorporation of existing knowledge.

The first step was to transcribe the interview recordings as a way of controlling bias and to generate reliable data analysis (Saunders et al., 2015). This involved listening to the interview recordings and taking note of the relevant details with an aim of realizing emerging ideas (Creswell & Plano-Clark, 2011). The recorded interviews were transcribed into word document. Following this process, the researcher read all interviews in detail and divided texts into segments of information. In thematic and content analysis, transcription is done with the main goal of identifying common concepts in the data (Halcomb & Davidson,

2006). As Halcomb & Davidson (2006) noted, this approach is ideal for mixed method studies.

The second was to familiarize with the data. This was achieved by listening to the interview recordings and reading through the transcripts. Field notes and interview transcripts were reviewed to pin-point distinct topics related to the research objectives. Familiarization with the data is done to explore the unique characteristics of each interview and identify interesting insights in line with the phenomenon under study (Yin, 2010). To enhance anonymity, names of SDMFs were replaced by a unique code.

The third step was to seek for open codes connected with GSCM practices and performance and the moderating effect of stakeholder pressure on the relationship between GSCM practices and performance; this permitted new categories and themes to surface from the data. This method of coding helped the researcher to focus in-depth on every interview and interview question. Open coding was performed on sections of data that were meaningful to the research objectives. Quotes from the data were used to add voice to the text (Sefiani and Brown, 2013) and clearly bring out the research context. The process of analyzing, reanalyzing, and comparing new data to existing data is known as constant comparison (Kiger & Varpio, 2020). As each phase of coding begun, it was important to continue reviewing the data in previous phases so that connections were constantly made until saturation occurred. A coding manual with the definition and characteristics of each of the codes was developed which was applied to each interview transcript.

After the open coding process, the texts were examined for any similarities and differences in order to draw conclusions. At this juncture, patterns and relationships started to emanate among main categories and sub-categories. The researcher identified the relationships between open codes and converted them into selective codes using the constant comparative method (Pathan et al., 2017). This stage entailed continuous consultation between the data, emerging themes and existing literature to cement insights that were more accustomed to the data and the researcher pinpointed 18 other theoretically informed themes.

Next, selective codes were clustered into themes. Coding terminology used for this dissertation was adopted from Pathan et al. (2017) who termed the three phases of coding as open, selective, and thematic. Open codes (or in-vivo codes) were derived from the individual interview transcripts. The selective codes were analytically generated through looking for patterns and explanations in the codes from the twenty different transcripts. Finally, based on all the selective codes generated, themes developed. Once the researcher had the initial set of themes, the researcher reviewed and revised these themes to ensure that each theme had enough data to support them and was distinct. Similar themes were merged together and themes that didn't have enough data to back them up were removed. Second, the researcher brought together the coded interviews and looked for relationships within and across the data sources. A table was developed to compare various coded interviews. As tentative themes emerged, the researcher tested them against the data (Haradhan, 2018). The researcher then integrated and refined the data until themes solidified (Haradhan, 2018). The researcher finally formulated the themes to come together into a narrative to tell the story (analyze) of the data. The narrative included the researcher's own interpretive analysis and made an argument for the claims that were presented. Lastly, theory development and incorporation of existing knowledge was done.

Coding of transcripts was completed in the order of the interviews conducted, in batches of four at a time, allowing the researcher to reflect and edit the interview questions as themes began to emerge from the data. Coding was used to aid the researcher in understanding the perspectives of the participants and in analyzing their combined experiences. Codes were created during the research process, based on the data, for the purposes of analyzing the data (Pathan et al., 2017). Coding was conducted both manually and using computer assisted qualitative data analysis software NVIVO 10.0 software. It has been widely advised to use different examination for qualitative data interpretation and analysis as supported by Charmaz (2020). This route of data analysis was selected due to the proven efficacy, accuracy and minimum amounts of systemic errors of the resulting outcomes when compared to conventional old-fashioned analysis approaches. Computer assisted qualitative data analysis software, NVivo 10, was used to aid in the data management and analysis process. This software offers a set of functions that support the coding and recovery of text.

Another remarkable privilege is that it assists researchers to write down memos during the analysis process (Charmaz, 2020). In an attempt to conquer reliable and informative data out of the interviews, each single interview skillfully created a transcript that was saved in a distinct word processor document. This enabled sustaining fertility of the interview data. Afterwards, all documents were imported in NVIVO 10 software for reading, analysis and coding. The main objective of the analysis was to transform data into findings, but more importantly was to make sense out of it. During the analysis, recurring ideas, patterns of beliefs and salient themes were extracted with relevant quotations that demonstrated support for these themes. The emerging themes were then examined based on their intensity, depth, and specificity with the phenomenon of interest, with additional emphasis given to comments that were frequently repeated or refuted by the interviewees (Charmaz, 2020).

3.10 Operationalization of Research Variables

In order to test the relationships among the constructs in a theoretical model, the constructs were operationalized in terms of their indicators. The theoretical and operational definitions of the main constructs in the model of this study are shown in Table 3.12.

Table 3. 12: Operationalization of research variables

Latent Construct	Sub-Construct	Operational Definition	Instrument	Level Scale	Data technique	analysis
Green Supply Chain Management practices	Green Purchasing	• Supplier Selection • Supplier Collaboration • Green Product Preference	Questionnaire-5-point Likert scale Interview schedule	Ordinal	Descriptive and Inferential statistics Thematic analysis	
	Green Packaging	• Eco-Design • Eco-Labeling • Packaging Integration with Logistics and Supply Chain Management with LSCM	Questionnaire-5-point Likert scale Interview schedule	Ordinal	Descriptive and Inferential statistics Thematic analysis	
	Green Distribution	• Environmentally Responsible Fleet Management • Eco-Distribution Management • Eco-Network Design	Questionnaire-5-point Likert scale Interview schedule	Ordinal	Descriptive and Inferential statistics Thematic analysis	
	Environmentally-Oriented Reverse Logistics	• Reverse Logistics Innovation • Product Recovery • Reverse Logistics Network Design	Questionnaire-5-point Likert scale Interview schedule	Ordinal	Descriptive and Inferential statistics Thematic analysis	
Firm Performance	Profitability	• Productive cash flow levels have reduced bankruptcy probability • Growth from profits • Sales growth rate has caused profitability to improve • Amount of money earned relative to amount of money spent has increased • Ability to fund business growth from profits	Questionnaire-5-point Likert scale Interview schedule	Ordinal	Descriptive and Inferential statistics Thematic analysis	

	Cost Efficiency	• Waste management fee reduction • Input costs has reduced due to recycle/reuse of materials • Energy cost reduction • Reduce environmental liability costs • Reduced transport costs	Questionnaire-5-point Likert scale	Ordinal	Descriptive and inferential statistics
			Interview schedule		Thematic analysis
	Market Share	• Increased company sales • Increased company sales in relation to industry sales • Share of presence • Share of voice • Share of distribution	Questionnaire-5-point Likert scale	Ordinal	Descriptive and inferential statistics
			Interview schedule		Thematic analysis
Stakeholder pressure	Regulatory pressure	• Regional environmental regulations influence GSCM practices of our firm • Stringent government regulations force our company to implement GSCM practices • Management take timely and appropriate follow-up actions on communication received from regulators • There is improvement of relationship between our firm and regulators as a result of the pressure regulators exert on our firm	Questionnaire-5-point Likert scale	Ordinal	Descriptive and Inferential statistics
		• Competitors earlier implementation of GSCM practices provide a benchmark and	Questionnaire-5-point Likert scale		Descriptive and Inferential statistics

Competitive pressure	guidance for our company's GSCM practices • Competitors have a strong influence on our firm's GSCM practices implementation • GSCM practices of our firm is affected by competitors GSCM practices • Management take timely and appropriate follow-up actions on communication received from competitors • There is improvement of relationship between our firm and competitors as a result of the pressure competitors exert on our firm	Interview schedule		Thematic analysis
Customer pressure	• Increased environmental consciousness of consumers has spurred our company to implement GSCM practices • Consumers have a strong influence on our firm's GSCM practices implementation • GSCM practices of our firm affect purchase decisions of consumers regarding our products • Management take timely and appropriate follow-up actions on communication received from consumers • There is improvement of relationship between our firm and consumers as a result of the pressure consumers exert on our firm	Questionnaire-5-point Likert scale Interview schedule	Ordinal	Descriptive and Inferential statistics Thematic analysis

Source: Researcher (2023)

3.11 Ethical consideration

To maintain ethics during the study, an ethical approval from Jaramogi Oginga Odinga University of Science and Technology Ethical Review Committee alongside approvals from the National Council of Science and Technology Inventions (NACOSTI) was obtained. Ethical concerns with respect to plagiarism, misconduct and data falsification were observed by the researcher. Informed consent was sought from participants before administering the research instruments. The questionnaire and interview schedule were adequately processed congenial with the study objective. The researcher issued an introduction letter explaining title and objectives to the participants during actual field work. Their role was also explained and they were informed that filling the questionnaire and completing the interview would take approximately 45 minutes. This helped participants make informed decision in respect of their participation to the study.

Confidentiality was observed during data collection, data storage and data handling from the point of collection until when the data will be destroyed. The researcher assured the respondents that the data sought was solely for academic purposes. To ensure anonymity, pseudonyms were used to protect participants' identity thus personal details of the participants did not appear in work produced. Additionally, all recorded materials and transcripts will be erased and questionnaires destroyed after five years, following final approval by the research committee, minimizing any future risks related to confidentiality. This will also allow the researcher to analyze the data, use them as a point of reference when responding to reviewers and examiners of the study. Transcripts and filled questionnaires were stored on a password protected computer. Only the researcher had access to this data.

The risks to human subjects associated with this study were negligible. All participants were expected to be over 18 years of age and were not exhibiting any impaired mental capacity, as determined by their ability to perform at the positions they hold in the work place. Meeting those criteria qualified them as participants in this study. The researcher also acted within the policies of each Soft Drinks Manufacturing Firm in Kenya and the government of Kenya, respecting the law of the Republic of Kenya.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

The chapter presents results obtained from the field and discussions therein. It also collates the general information of the participants and descriptive analysis of the study variables and their indicators. The chapter reviews the results of statistical analysis by testing the research hypotheses, presents discussions of the results and draws inference from the findings. The chapter ends by conducting moderated hierarchical regression analysis to establish the moderating effect of stakeholder pressure on the relationship between GSCM practices and organizational performance.

4.1 Response Rate

The researcher distributed a total of 415 questionnaires to senior managers in five departments (Supply Chain, Safety and Environment, Production, Finance and Marketing), per firm, from each of the 83 SDMFs. The findings on the response rate are presented in Table 4.1.

Table 4. 1: Response Rate of Senior Managers

Particulars	Respondents' responses		None-Responses	Questionnaire Distributed
	Responsive Responses	None-Responsive Responses		
Frequencies	344	30	41	415
Percentages	82.9%	8.2%	9.9%	100%

Source: (Field Survey Data, 2023)

Table 4.1 illustrates the response rate in this study. Out of the total number of 415 questionnaires that were distributed to the senior managers, 374 (91.1%) questionnaires were returned. However, 30 (8.2%) were partly filled thus giving partial information while 41(9.9%) were not returned at all. This represented 82.9% responsive response rate for the study. Saunders, Lewis & Thornhill (2007) suggest that a 30-40% responsive response rate is considered adequate. Sekaran (2003) and Mugenda (2003) indicates that a response rate of 30% and greater than 50% respectively is adequate while Hager et al. (2003) also recommend 50% response rate as adequate. Therefore, the 82.9% response rate was considered adequate for further analysis.

4.1.2 Background Information

Respondents were asked to provide information regarding the firm's demographic characteristics and firm's environmental consciousness. These included the position the respondent holds, ownership of the firm, the scope of market the firm serves, the length of time the firm has been in operation and number of full-time employees. The Table 4.2 shows results of background information.

Table 4. 2: Background Information of Senior Managers

Features	Category	Frequency	%
Position held in the firm	Senior Supply Chain manager	86	25
	Senior Safety and Environment manager	77	22
	Senior Production manager	69	20
	Senior Finance manager	60	17
	Senior Marketing manager	43	13
	Others	9	3
	TOTAL	344	100
Ownership status of the firm	Joint locally and foreign owned	224	65
	Fully locally owned	69	20
	Fully foreign owned	52	15
	TOTAL	344	100
Scope of market served by firm	Local	73	21
	Global	271	79
	TOTAL	344	100
Length of time firm has been in operation	Less than 20 years	34	10
	20-39 years	142	41
	40-59 years	103	30
	60-79 years	56	16
	80 years and above	9	3
	TOTAL	344	100
Number of full-time employees	0-10 employees	26	7.5
	11-49 employees	73	21
	50-250 employees	219	64
	Above 250 employees	26	7.5
	TOTAL	344	100

Source: (Field Survey Data, 2023)

The respondents were asked to indicate the positions they held in their firms, 25% of the respondents were supply chain senior managers, 22% of the respondents were safety and environment senior managers, 20% of the respondents were production senior managers, 17% were finance senior managers and 13% respondents were marketing senior managers whereas 3% of the respondents denoted the respondents whose titles were not equivalent to the designations in the questionnaire. 97% of the respondents were equivalent to the

designations in the questionnaire thus from the findings it is evidently seen that respondents had sufficient information about the daily operations of the firms and their responses to objective questions on firm level data were likely to be highly reliable.

Reference made from Table 4.2 shows majority of the respondents' firms were joint locally and foreign owned (65%), 20% were fully locally owned and 15% fully foreign owned. In terms of the scope of the market served by the firms, 79% were global markets. Only 21% served local markets. This means therefore most firms have access to knowledge, resources, technology and better understanding of sustainable practices that can facilitate the adoption of GSCM practices. Majority of the firms service global market where there is too much information sharing from global competitors. As a result of the trickle-down effect, competitive and economical pressure creeps in and the purely local firms eventually start adopting GSCM practices to curb competition.

In terms of length of time the firms had been in operation, 10% of them reported that they had been in operation for less than 20 years. Most of the firms involved in the study (87%) had been in existence for a period of between 20 and 80 years. A total of nine firms representing 3% operated for over 80 years. The average number of years that the firms had been in operation was 50.3 years. This is a perfect length of time within which a firm has resources and capabilities to improve performance, able to accumulate resources and establish more efficient systems, processes and practices that can help them become more effective.

The study pursued the number of full-time employees to establish the sizes of SDMFs in Kenya. 99 respondents (28.5%) indicated their firms were classified as Micro and Small firms with less than 50 full-time employees and the bulk of the respondents (64%) indicated that their firms had between 50 and 250 full time employees. The data results imply that most SDMFs in Kenya are medium enterprises in line with Achuora (2018) findings that most manufacturing firms in Kenya are medium enterprises. According to William and Litabingwa (2005), medium enterprises are defined in Kenya as those enterprises employing between 51-100 full time employees. Since majority of the SDMFs were medium-sized and had the ability to accumulate resources necessary to support implementation of GSCM

practices because of their size, then commissioning environmental initiatives and implementation of GSCM practices is a walk in the park as they have the resources to support this.

Table 4. 3: Firm’s environmental consciousness as per Senior Managers

Features	Category	Frequen cy	Percentages
Whether the firm is ISO 14001 certified	Yes	275	80
	No	69	20
	Total	344	100
Whether the firm has an environmental management policy	Yes	318	92
	No	26	8
	Total	344	100
Frequency of monthly interdepartmental meetings on environmental matters	1-2 times	78	23
	3-4 times	120	35
	5 or more times	146	42
	Total	344	100
Whether the firm has a budget for research and development on environmental issues	Yes	288	84
	No	56	16
	Total	344	100
Approximate amount of annual budget for research and development on environmental issues	Less than Ksh. 500,000	58	20
	Ksh. 500,001-Ksh. 1,000,000	46	16
	Ksh. 1,000,001-Ksh. 2,000,000	84	29
	Over Ksh. 2,000,000	100	35
	Total	288	100

Source: (Field Survey Data, 2023)

Table 4.3 shows the findings on firm’s commitment to environmental management. From the findings, 275 (80%) of the respondents indicated that their firms were ISO 14001 certified while 69 (20%) of the respondents indicated that their firms were not. Possession of ISO 14001 certification shows the goodwill of Soft Drinks Manufacturing Firms on environment and ultimately the implementation of GSCM practices. A substantial majority of the respondents (92%) indicated that their firms had an environmental management

policy. This is good on the firms approach to environmental management which in its entirety leads to GSCM practices implementation.

On the frequency of interdepartmental meetings convened about environmental issues and problems, 42% of the respondents indicated that their firms convened meetings five or more times a month to discuss environmental issues, 35% of the respondents indicated that their firms convened three to four times a month while the remaining 23% of the respondents indicated that their firms met one to two times on a monthly basis. This is also a good indication of the firms' commitment to GSCM practices.

In establishing whether the manufacturing firms had a budget for research and development apportioned to environmental management issues, 84% of the respondents indicated 'yes' to this question. 58(20%) respondents out of the respondents that indicated 'yes' indicated that their firms allocated the equivalence of less than Ksh. 500,000 a year, 46(16%) of respondents indicated that their firms apportioned the equivalent of between Ksh. 500,001 and 1,000,000 a year while 84(29%) respondents indicated that their firms allocated the equivalent of between Ksh. 1,000,001 and Ksh. 2,000,000 a year. Majority of the respondents (35%) indicated that their firm set aside the equivalent of more than Ksh. 2,000,000 a year for research and development for environmental management. Thus, it can be concluded that Soft Drinks Manufacturing Firms in Kenya are extremely committed to the realization of GSCM practices through research and development.

4.2 Performance in SDMFs in Kenya

To establish the measures which constitute performance in SDMFs in Kenya, the study used profitability, cost efficiency and market share as firm performance constructs. The firm performance constructs were measured using 15 performance measures. Each firm performance measure was rated on a 5 Point Likert scale where 1.0 was rated as Not at All, 2.0 as Small Extent, 3.0 as Moderate Extent, 4.0 was rated as Great Extent and 5.0 was rated as Very Great Extent. The results are presented as in Table 4.46.

Table 4.46 Performance in SDMFs in Kenya

Profitability Performance measures	Frequency and percentage distribution of Responses					Σf_i
	1	2	3	4	5	
1. The firm productive Cash Flow levels have reduced the firm bankruptcy probability	15(4.4)	33(9.6)	137(39.8)	154(44.8)	5(1.5)	344
2. The firm has experienced Growth from Profits	4(1.2)	29(8.4)	148(43.0)	153(44.5)	10(2.9)	344
3. Sales growth rate caused profitability to improve	4(1.2)	29(8.4)	148(43.0)	160(46.5)	3(0.9)	344
4. The amount of money earned by the firm relative to the amount of money spent by the firm has increased	1(0.3)	26(7.6)	154(44.7)	156(45.4)	7(2.0)	344
5. Firm has the ability to internally fund business ventures instead of using external sources	3(0.9)	26(7.6)	156(45.4)	154(44.7)	5(1.4)	344
Cost Efficiency Performance measures						
6. Firm has experienced waste management fee reduction	12(3.5)	14(4.1)	7(2.0)	239(69.5)	72(20.9)	344
7. Input costs of the firm has reduced due to recycle/re-use of material	8(2.3)	8(2.3)	24(7.0)	271(78.8)	33(9.6)	344
8. Firm has experienced energy cost reduction	7(2.0)	7(2.0)	12(3.5)	284(82.6)	34(9.9)	344
9. Environmental-related liability costs of the firm has reduced	14(4.1)	12(3.5)	11(3.2)	240(69.8)	67(19.5)	344
10. Transport costs of the firm has reduced	12(3.5)	12(3.5)	20(5.8)	294(85.5)	6(1.7)	344
Market Share Performance measures						
11. Firm has experienced an increase in sales volume of products	14(4.1)	283(82.3)	4(1.2)	8(2.3)	35(10.2)	344
12. The firm's sales in relation to the industry sales has increased	9(2.6)	119(34.6)	76(22.1)	107(31.1)	33(9.6)	344
13. Percentage of consumers who prefer our firm's brands over our competitors' brands (share of presence) has increased	5(1.5)	114(33.1)	78(22.7)	113(32.8)	34(9.9)	344
14. Our firm's product brands visibility and presence in the market (share of voice) is high compared to those of our competitors	12(3.5)	14(4.1)	7(2.0)	239(69.5)	72(20.9)	344

15. Percentage of our firm's total revenue generated through distribution channels (share of distribution) has increased compared to those of our competitors	5(1.5)	24(7.0)	158(45.9)	152(44.2)	5(1.5)	344
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Source: (Field Survey Data, 2023)

From the findings presented in the Table 4.13 it is clear that the organization’s productive Cash Flow levels have reduced the firms’ bankruptcy probability to a Great Extent as reported by 154(44.8%) majority of the respondents. It is evident from the findings that the firms have experienced growth from profits to a Great Extent as reported by 153(44.5%) of the respondents. It is also evident form the findings that sales growth rate caused profitability to improve to a Great Extent as revealed by 160(46.5%) of the respondents. Findings denote that the amount of money earned by the firm relative to the amount of money spent by the firms has increased to a Moderate Extent, 156(45.4%). Finally, the findings denote that firms have the ability to internally fund business ventures instead of using external sources to a Moderate Extent as reported by 156(45.4%) of the respondents. The findings imply that profitability performance measures across the surveyed SDMFs were explicit to a Great Extent.

From the findings on cost efficiency performance, a majority 239(69.5%) of the respondents reported that their firm had experienced reduction in fees for waste management to a Great Extent. 271(78.8%) of the respondent reported that the input costs had reduced due to adopting reusing and recycling to a Great Extent. Majority, 284(82.6%) of the respondents reported that the firm experienced energy cost reduction to a Great Extent. The descriptive statistics also denote that a majority 240(69.8%) of the respondents reported that environmental related liability costs of the firm had reduced to a Great Extent. Finally, majority 294(85.5%) of the respondents reported that transport costs of the firm had reduced to a Great Extent. Thus, these findings imply that cost efficiency performance measures across the surveyed SDMFs were explicit to a Great Extent.

The study also inquired from participants the performance in terms of market share. Firstly, respondents were asked whether firm had experienced increase in sales volume of products.

majority of the respondents 283(82.3%) indicated to a Small Extent. Majority of the respondents, 119(34.6%) confirmed that the firm's sales in relation to the industry sales has increased to a Small Extent. The descriptive statistics also denote that majority of the respondents, 114(33.1%) indicated that percentage of consumers who prefer our firm's brands over competitors' brands (share of presence) has increased to a Small Extent. It is also evident from the findings that firm's product brands visibility and presence in the market (share of voice) is high compared to those of competitors to a Great Extent as indicated by majority of the respondents 239(69.5%). Finally, majority of the respondents, 158(45.9) indicate that percentage of firm's total revenue generated through distribution channels (share of distribution) has increased compared to those of competitors to a moderate extent.

4.3. Green Purchasing

The Green Purchasing construct was measured using 15 practices. Each Green Purchasing practice of firms in the Soft Drinks industry was rated on a 5 Point Likert scale where 1.0 was rated as not at all, 2.0 as small extent, 3.0 as moderate extent, 4.0 was rated as great extent and 5.0 was rated as very great extent. The results are presented as in Table 4.4.

Table 4.4: Descriptive statistics results on Green Purchasing

Sub-variable measure	Frequency and percentage distribution of Responses					Σfi
	1	2	3	4	5	
Supplier Selection						
Our firm Requires that suppliers must possess EMS certification (e.g. ISO 14001, BS 7750 or EMAS	17(4.9)	95(27.6)	194(56.4)	13(3.8)	25(7.3)	344
Our firm audits suppliers for compliance with environmental requirements	9(2.6)	127(36.9)	178(51.7)	15(4.4)	15(4.4)	344
Our firm evaluates second-tier suppliers for environmentally-friendly practices	125(36.3)	197(57.3)	6(1.7)	8(2.3)	8(2.3)	344
Our firm evaluates actual environmental performance records including fines and penalties	1(0.3)	112(32.6)	207(60.2)	10(2.9)	14(4.1)	344
Our firm uses supplier assessment instruments on environmental practices like questionnaire filling during selection	3(0.9)	122(35.5)	203(59.0)	6(1.7)	10(2.9)	344
Supplier Collaboration						
Supplier Relationship Management is aimed at promoting green	5(1.5)	122(35.5)	203(59.0)	6(1.7)	8(2.3)	344
Communicates Green Purchasing KPIs with suppliers	5(1.5)	121(35.2)	206(59.9)	7(2)	5(1.5)	344

Rewards/awards suppliers for improvement in green practices	122(35.5)	202(58.7)	7(2)	5(1.5)	8(2.3)	344
Holds environmental awareness training and seminars periodically with suppliers	65(18.9)	185(53.8)	74(21.5)	11(3.2)	9(2.6)	344
Works to control the risks resulting from suppliers' operations	120(34.9)	202(58.7)	6(1.7)	8(2.3)	8(2.3)	344
Green Product Preference						
Provides design specification to suppliers that include environmental requirement for purchased items	117(34)	193(56.1)	11(3.2)	11(3.2)	12(3.5)	344
Considers material environmental aspects (primary energy sources saving, energy saving, water saving, recyclable, re-usable, recoverable, toxic free and low chemical content items) in products when purchasing products	103(29.9)	206(59.9)	16(4.7)	8(2.3)	11(3.2)	344
Considers material consumption in production of product when purchasing products	112(32.6)	186(54.1)	9(2.6)	8(2.3)	29(8.4)	344
Considers waste production in product use when purchasing products	107(31.1)	197(57.3)	5(1.5)	9(2.6)	26(7.6)	344
Requires suppliers to use degradable and non-hazardous substance-free packaging	103(29.9)	177(51.5)	18(5.2)	3(0.9)	43(12.5)	344

Source: (Field Survey Data, 2023)

From the findings presented in Table 4.4, majority 194(56.4%) of the respondents indicated to a moderate extent that firms require suppliers to possess EMS certification (e.g. ISO 14001, BS 7750 or EMAS). Majority of the respondents, 178(51.7%) reported that their firms to a moderate extent audit supplier to evaluate compliance with environmental requirements. The findings also indicate that firms evaluate second-tier suppliers for environmentally-friendly practices although to a small extent as indicated by majority, 197(57.3%) of the respondents. Furthermore, it is clear from the findings that firms evaluate actual environmental performance records including fines and penalties to a moderate extent which also agrees with majority, 207(60.2%) of the respondents. Finally, the findings show that firms use supplier assessment instruments on environmental practices such as questionnaire filling during selection to a moderate extent as indicated by majority, 203(59.0%) of the respondents.

The descriptive results on Supplier Collaboration shows that majority of the respondent 203(59.0%) indicated that their firms' supplier relationship management to a moderate extent aimed at promoting green. It also emerged from the findings that firms to a moderate

extent communicated on Green Purchasing KPIs with suppliers as revealed by majority of 206(59.9%) of the respondents. SDMFs to a small extent reward/award supplier for improvement in green practices according to the majority, 202(58.7%) of the respondents. The findings also indicate that firms hold environmental awareness training and seminars periodically with the suppliers, indicated by the majority of respondents, 185(53.8%) although to a small extent. Work to control the risks resulting from suppliers' operations was done to a small extent according to 185(53.8%) of the respondents whereas work to control the risks resulting from suppliers' operations was done to a small extent according to 202(58.7%) of the respondents.

The results on Green Product Preference findings and results shows that firms provide design specifications to suppliers that include environmental requirement for purchased items to a small extent as shown by majority, 193(56.1%) of the respondent. Firms also consider material environmental aspects (primary energy sources saving, energy saving, water saving, recyclable, re-usable, recoverable, toxic free and low chemical content items) to a small extent in product use when purchasing products as shown by 206(59.9%) majority of the respondents. Findings also clearly indicate that the firms consider material consumption in production of product when purchasing products to a small extent as shown by majority of the respondents 186(54.1%). The findings also indicate that firms consider waste production in product use when purchasing products to a small extent, according to majority of the respondent 197(57.3%). Findings also show that firms require suppliers to use degradable and non-hazardous substance-free packaging to a small extent, which is evident from the majority of the respondent, 177(51.5%).

4.3.1. Summary statistics on Green Purchasing

The study established the effect of Green Purchasing on performance of SDMFs in Kenya. The respondents rated their responses on a 5 Point Likert scale where 1.0 was rated as Not at All, 2.0 was rated as Small Extent, 3.0 at Moderate Extent, 4.0 was rated at Great Extent and 5.0 was rated at Very Great Extent in its influence on the performance of firms in the Soft Drinks industry. The information obtained from the field is presented as in table 4.5 below.

Table 4. 5: Summary statistics on Green Purchasing

Variables	N	Minimum	Maximum	Mean	Std. deviation
Supplier Selection (SS)	344	1.00	5.00	2.9771	1.01630
Supplier Collaboration (SC)	344	1.00	5.00	3.2419	.69211
Green Product Preference (GPP)	344	1.00	5.00	3.1300	.74548
Valid N (listwise)	344				

Source: (Field Survey Data, 2023)

A scan on the summary statistic results above show that Supplier Collaboration had the highest average mean (M=3.24) with a standard deviation of .692 while Supplier Selection had the lowest average mean (M=2.98) with the highest standard deviation (STD=1.016). Green Product Preference had an average mean of 3.13 with a standard deviation of .745 as shown in the table above.

4.3.2 Effect of Green Purchasing on Performance of Soft Drinks Manufacturing Firms in Kenya

The first objective of the study sought to establish effect of Green Purchasing on performance of Soft Drinks Manufacturing Firms in Kenya. The study started by analyzing the effect of Green Purchasing on each of the measures of firm performance (Profitability, Cost Efficiency, Market Share) through multiple regression models.

4.3.2.1 Green Purchasing on Profitability Performance

A correlation was performed in order to establish whether Green Purchasing was correlated to profitability. To achieve this, a Pearson product moment correlation was employed to find the association between Green Purchasing and Profitability performance. The main subscales under Green Purchasing were Supplier Selection, Supplier Collaboration and Green Product Preference. The findings are presented as shown in Table 4.6.

Table 4. 6: Correlation between Green Purchasing and Profitability Performance

		Profitability performance measures	Supplier Selection (SS)	Supplier Collaboration (SC)	Green Product Preference (GPP)
Profitability performance measures	Pearson	1	.544**	.659**	.436**
	Correlation				
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Supplier Selection (SS)	Pearson	.544**	1	.585**	.313**
	Correlation				
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Supplier Collaboration (SC)	Pearson	.659**	.585**	1	.454**
	Correlation				
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Green Product Preference (GPP)	Pearson	.436**	.313**	.454**	1
	Correlation				
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The results in the table above indicates that there is a positive and significant correlation between Supplier Selection and profitability ($r=.544$, $p<.05$), Supplier Collaboration and profitability ($r=.659$, $p<.05$), Green Product Preference and profitability ($r=.436$, $p<.05$). This means that Profitability performance is positively associated with all the indicators of Green Purchasing and therefore, aspects of Green Purchasing could have an effect on performance in terms of profit levels in SDMFs

Subsequently, to establish the effect of Green Purchasing on Profitability performance, a standard multiple regression model was adopted. In this case, Profitability performance was regressed against the three subscales of Green Purchasing. This was modelled in the equation 3.1;

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_2 X_{12i} + \beta_3 X_{13i} + \varepsilon_i \dots \dots \dots (3.1)$$

The findings on model summary are presented as shown in Table 4.7.

Table 4. 7: Model Results on Effect of Green Purchasing on Profitability Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.701 ^a	.492	.488	.44793	.492	109.787	3	340	.000
a. Predictors: (Constant), Mean GPP, Mean Supplier Selection, Mean Supplier Collaboration									
Model	Unstandardized Coefficients B		Standardized Coefficients Beta		T	Sig.	Collinearity Statistics Tolerance VIF		
(Constant)	1.207	.129			9.375	.000			
1 Supplier Selection	.141	.029	.229		4.788	.000	.655	1.528	
Supplier Collaboration	.409	.046	.453		8.893	.000	.576	1.736	
Green Product Preference	.133	.036	.159		3.656	.000	.791	1.265	

a. Dependent Variable: mean profitability performance measures

Source: (Field Survey Data, 2023)

From the results, the $R=.701$, indicating that there was positive correlation between Profitability performance and Green Purchasing. The R square results ($R^2=.492$, $p<.05$) show that Green Purchasing accounts for 49.2% variance in Profitability performance, which is significant, $F(3, 340) = 109.787$, $p<.05$. Findings also indicate that all Green Purchasing subscales have a positive and significant effect on Profitability performance. These is in the order of; Supplier Collaboration ($\beta=.453$, $p<.05$) followed by Supplier Selection ($\beta=.229$, $p<.05$) and finally Green Product Preference ($\beta=.159$, $p<.05$). This means that Green Purchasing positively contributes to Profitability performance. In practice, unit adoption of green purchasing practices (supplier selection, supplier collaboration, green product preference) by SDMFs improves profit levels by 0.229, 0.453 and 0.159 units respectively

4.3.2.2 Green Purchasing on Cost Efficiency Performance

A correlation between Green Purchasing and Cost Efficiency performance using Pearson product moment correlation was carried out and the findings presented as shown in Table 4.8.

Table 4. 8: Correlation between Green Purchasing and Cost Efficiency Performance

		Cost Efficiency performance (SS)	Supplier Selection (SS)	Supplier Collaboration (SC)	Green Product Preference (GPP)
Cost Efficiency performance	Pearson	1	.423**	.543**	.404**
	Correlation				
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Supplier Selection (SS)	Pearson	.423**	1	.585**	.313**
	Correlation				
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Supplier Collaboration (SC)	Pearson	.543**	.585**	1	.454**
	Correlation				
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Green Product Preference (GPP)	Pearson	.404**	.313**	.454**	1
	Correlation				
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings show that Cost Efficiency performance is positively correlated to all the indicators of Green Purchasing. The strongest positive and significant correlation exists between Supplier Collaboration and Cost Efficiency (r=.543, p<.05), followed by Supplier Selection and Cost Efficiency performance (r=.423, p<.05) and finally Green Product Preference and Cost Efficiency performance (r=.404, p<.05). This means that Cost Efficiency is positively associated with Green Purchasing, and therefore, aspects of Green Purchasing could have an effect on performance in terms of reducing costs in SDMFs

Further, a standard multiple regression analysis established the effect of Green Purchasing on Cost Efficiency Performance. This was modelled as follows;

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_2 X_{12i} + \beta_3 X_{13i} + \varepsilon_i \dots \dots \dots (3.2)$$

Table 4.9: Model Results on Effect of Green Purchasing on Cost Efficiency Performance

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change in the R Square	Change in F	df1	df2	Sig.	F
1	.584 ^a	.341	.335	.52295	.341	58.523	3	340	.000	

a. Predictors: (Constant), Mean GPP, Mean Supplier Selection, Mean Supplier Collaboration

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.	Collinearity Statistics Tolerance	VIF
(Constant)	1.519	.150		10.103	.000		
Supplier Selection	.093	.034	.147	2.694	.007	.655	1.528
Supplier Collaboration	.344	.054	.371	6.395	.000	.576	1.736
Green Product Preference	.163	.043	.190	3.838	.000	.791	1.265

a. Dependent Variable: Cost Efficiency performance

Source: (Field Survey Data, 2023)

The results indicate that Green Purchasing accounts for 34.1% variance in Cost Efficiency performance, $R^2 = .335$, which is significant, $F(3, 340) = 58.523$, $p < .05$. This implies that there is sufficient evidence for a significant Cost Efficiency performance change due to adoption of Green Purchasing. Results on model coefficients shows that Supplier Collaboration has the strongest contribution on Cost Efficiency performance ($\beta = .371$, $p < .05$), which is significant, followed by Green Product Preference ($\beta = .190$, $p < .05$) and finally Supplier Selection ($\beta = .147$, $p < .05$). Although Supplier Collaboration has a moderate effect, Supplier Selection and Green Product Preference have a weak effect. It can however be noted that in general, Green Purchasing positively contributes to Cost Efficiency performance of SDMFs in Kenya. In practice, the results indicate that unit adoption of green

purchasing practices (supplier selection, supplier collaboration, green product preference) by SDMFs reduces costs by 0.147, 0.371 and 0.190 units respectively

4.3.2.3 Green Purchasing on Market Share Performance

The other element of performance was Market Share of SDMFs in Kenya. Pearson product moment correlation was used to establish the relationship between Market Share and all the subscales of Green Purchasing. The findings are presented as shown in Table 4.10.

Table 4.10: Correlation between Green Purchasing and Market Share Performance

		Market Share	Supplier Selection (SS)	Supplier Collaboration (SC)	Green Product Preference (GPP)
mean Market Share	Pearson Correlation	1	.621**	.695**	.482**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Supplier Selection (SS)	Pearson Correlation	.621**	1	.585**	.313**
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Supplier Collaboration (SC)	Pearson Correlation	.695**	.585**	1	.454**
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Green Product Preference (GPP)	Pearson Correlation	.482**	.313**	.454**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings show that there is a strong relationship between Market Share and Supplier Selection ($r=.621$, $p<.05$) as well as Market Share and Supplier Collaboration ($r=.695$, $p<.05$) but a moderate relationship between Market Share and Green Product Preference ($r=.482$, $p<.05$). This means that Market Share of SDMFs is strongly associated with Green Purchasing and more particularly Supplier Collaboration and Supplier Selection, and therefore, aspects of Green Purchasing could have an effect on performance in terms of improving market share in SDMFs.

Further findings on the amount of variance in Market Share that is explained by Green Purchasing was obtained through a standard multiple regression model. This was modelled in the form;

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_2 X_{12i} + \beta_3 X_{13i} + \varepsilon_i \dots \dots \dots (3.4)$$

The results are presented as shown in Table 4.11.

Table 4.11: Model Results on Effect of Green Purchasing on Market Share Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.763 ^a	.582	.578	.57418	.582	157.745	3	340	.000
a. Predictors: (Constant), Green Product Preference (GPP), Supplier Selection (SS), Supplier Collaboration (SC)									
Model	Unstandardized Coefficients		Standardized Coefficients		T	Sig.	Collinearity Statistics		
	B	Std. Error	Beta				Tolerance	VIF	
(Constant)	-.417	.165			-2.526	.012			
1 Supplier Selection (SS)	.272	.038	.312		7.206	.000	.655	1.528	
Supplier Collaboration (SC)	.543	.059	.425		9.199	.000	.576	1.736	
Green Product Preference (GPP)	.228	.047	.192		4.865	.000	.791	1.265	

a. Dependent Variable: mean Market Share

Source: (Field Survey Data, 2023)

The findings show that Green Purchasing has a high multiple correlation to Market Share, $R=.763$. However, when this coefficient is square, results shows that Green Purchasing accounts for 58.2% variance in Market Share, $R^2=.582$, which is significant, $F(3, 340) = 157.745$, $p < .05$. This means that Green Purchasing accounts for over 50% variance in Market Share of Soft Drinks Manufacturing Firms in Kenya. Additional results on the contribution of each of the elements of Green Purchasing on Market Share are presented. Results indicate that without incorporating Green Purchasing in the model, Market Share would depreciate by 0.417 units. However, Supplier Collaboration makes the strongest significant contribution to the Market Share ($\beta=.425$, $p < .05$) followed by Supplier Selection ($\beta=.312$, $p < .05$) and finally Green Product Preference ($\beta=.192$, $p < .05$). It can be inferred

from these findings that Green Purchasing enhances Market Share such that well-coordinated Supplier Collaboration and Selection widens the market scope of the Soft Drinks manufacturing firms in Kenya. Additionally, Green Product Preference makes a significant contribution although weak. In practice, the results indicate that unit adoption of green purchasing practices (supplier selection, supplier collaboration, green product preference) by SDMFs will alleviate market shares by 0.312, 0.425 and 0.192 units respectively.

4.3.2.4 Green Purchasing on Performance of Soft Drinks Manufacturing Firms in Kenya

The study also carried out an analysis to establish effect of Green Purchasing on performance whereby the mean performance was regressed against the three measures of Green Purchasing (independent variable) which were Supplier Selection, Supplier Collaboration and Green Product Preference. This was modelled as follows;

$$Y_i = \beta_0 + \beta_1 X_{11i} + \beta_2 X_{12i} + \beta_3 X_{13i} + \varepsilon_i \dots \dots \dots (3.4)$$

Table 4.12: Model Results on Effect of Green Purchasing on performance of Soft Drinks Manufacturing Firms in Kenya

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.832a	.692	.688	.29748	.692	188.388	3	340	.000
a. Predictors: (Constant), Mean GPP, Mean Supplier Selection, Mean Supplier Collaboration									
Coefficients				Unstandardized Coefficients	Standardized Coefficients	T	Sig.		
Model			B	Std. Error	Beta				
		(Constant)	1.030	.103			10.017		.000
		Mean Supplier Selection	.180	.029	.280		6.165		.000
1		Mean Supplier Collaboration	.391	.037	.487		10.597		.000
		Mean GPP	.156	.027	.229		5.719		.000
a. Dependent Variable: mean performance									

Source: (Field Survey Data, 2023)

The Green Purchasing model summary in Table 4.15 shows that the proportion of variance in the performance explained by the independent variables (all three dimensions of Green Purchasing) is 69.2% or $R^2=0.692$. This variation explained in the model is regarded as sufficiently large (Cohen, 1988). The other variations in organizational performance of

30.8% are explained by other external factors outside this model. The shrinkage between $R^2=0.692$ and adjusted $R^2=0.688$ is 0.004 and shows that the suggested model generalizes quite well as the adjusted R^2 is too close to R^2 . Shrinkage of less than 0.5 depicts that the validity of the model is very good (Field, 2005).

The findings also show that all the three independent variables, which include: Supplier Selection ($\beta = 0.280, p < .05$); Supplier Collaboration ($\beta = 0.487, p < .05$) and Green Product Preference ($\beta = .229, p < .05$) had positive significant effect on performance. The unstandardized β coefficient of Supplier Selection shows that unit change in the level of Supplier Selection causes 0.180 units increment in performance level and the change is significant as shown by the p-value. A unit change in Supplier Collaboration and Green Product Preference causes 0.391 and 0.156 units increase respectively in organizational performance levels of SDMFs in Kenya. Therefore, the regression results indicate that there was a statistically significant positive effect of Green Purchasing on performance of SDMFs in Kenya. The null hypothesis stated as $H_{01}: \beta = 0$, Green Purchasing has no effect on performance of Soft Drinks Manufacturing Firms in Kenya is rejected. It is thus concluded that there is a significantly positive effect of Green Purchasing on performance of Soft Drinks Manufacturing Firms in Kenya.

4.3.2.5 Summary Model results on Effect of Green Purchasing on Performance

The first objective of the study sought to establish the effect of Green Purchasing on performance of Soft Drinks Manufacturing Firms in Kenya. In order to achieve this, a standard multiple regression analysis was carried out involving mean subscales of Green Purchasing and the mean subscales of firm performance. This was done in order to test the formulated hypothesis: H_{01} : *Green Purchasing has no effect on performance of Soft Drinks Manufacturing Firms in Kenya*. To achieve this, the mean performance was regressed against mean of the three measures of Green Purchasing (Supplier Selection, Supplier Collaboration, Green Product Preference). This was modelled as follows;

$$Y_i = \beta_0 + \beta_1 X_{1i} + \varepsilon_i \dots \dots \dots (3.5)$$

Table 4.13: Summary Model on Effect of Green Purchasing on Performance of Soft Drinks Manufacturing Firms in Kenya

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.816 ^a	.666	.664	.30858	.666	505.424	1	342	.000
a. Predictors: (Constant), Green Purchasing									
b. Dependent Variable: mean performance									
Coefficients ^a									
Model	Unstandardized Coefficients			Standardized Coefficients		T		Sig.	
	B	Std. Error		Beta					
1	(Constant)	1.121	.103			10.871		.000	
	Green Purchasing	.703	.031	.816		22.482		.000	
a. Dependent Variable: mean performance									

Source: (Field Survey Data, 2023)

The overall model summary indicates that Green Purchasing accounted for 66.4% variance in performance, R Square=.664, which was significant and not by chance, F (1,342) =505.424, p<.05. The findings also show that Green Purchasing has a positive and significant effect on performance (β =.816, p<.05). This is a strongly significant effect indicating a strong magnitude of change in performance by 0.816 units as a result of a one-unit improvement in Green Purchasing. These results were further illustrated as shown in equation 4.5.

$$Y = 1.121 + 0.703X_{\text{green_purchasing}} \dots\dots\dots (4.5)$$

From the equation, the constant term is 1.121, implying that even without including Green Purchasing in the model, performance of Soft Drinks manufacturing firms is an index of 1.121 units. However, including Green Purchasing improves performance by 0.703 units.

Results of the study provide evidence that Green Purchasing practices have a significant positive effect (β =.816, p<.05) on performance and explains a change in performance (R^2 =.664, p<0.5). Empirically, the findings relate with several other studies. Islam et al. (2017) explored the impacts of sustainable Green Purchasing practices on organization performance in Saudi Arabia by surveying 400 purchasing managers across multi-faceted

sectors revealed that there existed a significant positive relationship between Sustainable Purchasing practices and financial performance.

From a West African perspective, findings of Kaikai & Mose (2020) denoted that Green Purchasing practices have a significant positive effect on performance of the mining industry. In a Kenyan case, Bor et al. (2019) modeled the relationship between Green Purchasing and performance in the food processing industry. Results of the study depicted a strong positive relationship between Green Purchasing and performance. In contrast, a study conducted by Galaezzo et al. (2021) on Green Procurement and Financial Performance in the tourism industry revealed that there is no relationship between Green Procurement practices and Financial Performance. Moreover, a study conducted in Jordan by Alghababshe et al. (2022) revealed that companies competing in cost show limited attention to Green Purchasing practices. This may be because Green Purchasing practices result in additional costs for companies and, thus, their financial benefits are not visible for all cases, particularly in developing countries (Namagembe et al., 2019). In addition, the level of Green Purchasing adoption and the environmental awareness of customers in developing countries is not as high as in developed countries. For example, Sari (2022) in the Turkish food industry shows that although the green criterion is considered as a factor in Supplier Selection, it is one of the least important. In the current study findings, it can be show that Green Purchasing has a significant positive effect on performance. This means that the hypothesis testing revealed sufficient evidence to reject the null hypothesis. The study therefore adopts an alternative hypothesis and concludes that Green Purchasing has a positive and significant effect on performance.

4.4 Green Packaging

The study established the extent to which the indicators of Green Packaging practices affected performance of firms in the Soft Drinks industry. The responses were based on a 5-point Likert scale about statements on the indicators of Green Packaging. The respondents rated their responses where 1.0 was rated as not at all, 2.0 was rated as small extent, 3.0 at moderate extent, 4.0 was rated at great extent and 5.0 was rated at very great extent in its

influence on the performance of firms in the Soft Drinks industry. The results are presented as in tables 4.14.

Table 4.14: Descriptive statistics results on Green Packaging

Sub-variable measure	Frequency and percentage distribution of Responses					Σfi
	1	2	3	4	5	
Eco-Design	71(20.6)	200(58.1)	18(5.2)	11(3.2)	44(12.8)	344
Design for use of raw materials (selection of low-impact materials, non-hazardous materials, non-exhaustible materials, low energy content materials, recycled materials and recyclable materials)						
Design for manufacture (optimization of production techniques, alternative production techniques, fewer production processes, low/clean energy consumption, low generation of waste and few/clean production consumables)	74(21.5)	196(57)	16(4.7)	13(3.8)	45(13.1)	344
Design for distribution (less/clean packaging, optimized weight and volume of product and package, efficient transportation and transport mode)	44(12.8)	226(65.7)	17(4.9)	25(7.3)	32(9.3)	344
Design for product use (reduction of the environmental impact in the user stage, low energy consumption, clean energy source, few consumables needed during use, clean consumables during use and no energy/auxiliary material use)	63(18.3)	230(66.9)	35(10.2)	10(2.9)	6(1.7)	344
Design for end of life (optimization of end-of-life system, Life-Cycle Assessment on environmental compatibility of packaging materials, reuse of product; remanufacturing, recycling of materials and clean incineration like depolymerization of PET waste)	63(18.3)	229(66.6)	16(4.7)	6(1.7)	30(8.7)	344
Eco-Labeling						
Adopted Eco-Labeling to describe the information of a product about the environmental impact associated with its use	13(3.8)	275(79.9)	30(8.7)	10(2.9)	16(4.7)	344
Eco-Labeling criteria considers the general overall life cycle of a product	11(3.2)	275(79.9)	14(4.1)	5(1.5)	39(11.3)	344
Considers Eco-Labeling to be a valuable tool for purposes of communicating its' products qualities as well as the firm's concern for the environment	6(1.7)	323(93.9)	6(1.7)	4(1.2)	5(1.5)	344
Adopted Eco-Labeling to represent a tool to governments, manufacturers and consumers to address environmental problems associated with the firm's products	7(2)	308(89.5)	9(2.6)	6(1.7)	14(4.1)	344

Supports the idea of private Eco-Labeling schemes existence for Soft Drinks Manufacturing Firms worldwide	12(3.5)	297(86.3)	3(0.9)	4(1.2)	28(8.1)	344
Packaging Integration with Logistics and Supply Chain Management						
Internally collaborates and coordinates in packaging design among all affected departments	36(10.5)	156(45.3)	124(36)	14(4.1)	14(4.1)	344
Integrates packaging and product design	104(30.2)	126(36.6)	100(29.1)	7(2)	7(2)	344
Collaborates with packaging suppliers during the design process to ensure integration of green issues	36(10.5)	173(50.3)	122(35.5)	7(2)	6(1.7)	344
Collaborates with other Soft Drinks Manufacturing Firms (even with the competition) to make joint packaging	284(82.6)	6(1.7)	11(3.2)	31(9)	12(3.5)	344
Collaborates with retailers on packaging design and used packaging collection	12(3.5)	137(39.8)	110(32)	43(12.5)	42(12.2)	344

Source: (Field Survey Data, 2023)

The results from the Table 4.6 on Eco-Design clearly indicates that design for use of raw materials (selection of low-impact materials, non-hazardous materials, non-exhaustible materials, low energy content materials, recycled materials and recyclable materials) is practiced to a small extent as indicated by majority, 200(58.1%) of the respondents. Majority, 196(57.0%) of the respondents also indicated that the design for manufacture (optimization of production techniques, alternative production techniques, fewer production processes, low/clean energy consumption, low generation of waste and few/clean production consumables) is practiced to a small extent. This clearly shows that SDMFs take little account on the design for manufacture. From the findings, it emerged that design for distribution (less/clean packaging, optimized weight and volume of product and package, efficient transportation and transport mode) is practiced to small extent as indicated by majority 226(65.7%) of the respondents. The findings reveal that design for product use (reduction of the environmental impact in the user stage, low energy consumption, clean energy source, few consumables needed during use, clean consumables during use and no energy/auxiliary material use) is practiced to a small extent proved by majority of the respondents, 230(66.9%). Furthermore, the findings evidently indicate that to a small extent the design for end of life (optimization of end-of-life system, Life-Cycle Assessment on environmental compatibility of packaging materials, reuse of product; remanufacturing,

recycling of materials and clean incineration e.g. De-polymerization of PET waste) is practiced though to a small extent. This is by 229(66.6%) respondents, thus it can be concluded therefore that Eco-Design is practiced at a small extent by the firms.

A scan through descriptive results on Eco-Labeling indicates that firms to a small extent adopt Eco-Labeling to describe the information of a product about the environmental impact associated with its use. This is shown by the majority, 275(79.9%) of the respondents. Firms also practiced Eco-labeling criteria which considers the general overall life cycle of a product to a small extent supported by majority, 275(79.9%) of the respondents. The findings also indicate that to a small extent, firms considered Eco-Labeling to be a valuable tool for purposes of communicating its' products qualities as well as the firm's concern for the environment evidenced by the majority, 323(93.9%) of the respondents. The firms also practiced adopting Eco-Labeling to represent a tool to governments, manufacturers and consumers to address environmental problems associated with the firm's products to a small extent as reported by 308(89.5%), majority of the respondents. Furthermore, from the findings, firms practiced supporting the idea of private Eco-Labeling schemes existence for Soft Drinks Manufacturing Firms worldwide to a small extent as indicated by 297(86.3%) of the respondents. It can be concluded therefore that SDMFs seldom practiced Eco-Labeling.

Results on Packaging Integration with Logistics and Supply Chain Managements emerged that firms practiced to a small extent internal collaboration and coordination in packaging design among all affected departments as indicated by 156(45.3%) respondents. Majority of the respondents, 126(36.6) reported that firms practiced integrating packaging and product design to a small extent whereas 173(50.3%) firms practiced collaboration with packaging suppliers during the design process to ensure integration of green issues to a small extent. Collaboration with other Soft Drinks Manufacturing Firms (even with the competition) to make joint packaging, has not been practiced by the firms as shown by the majority, 284(82.6%) of the respondents. The findings also indicate clearly that collaboration with retailers on packaging design and used packaging collection has been done to a small extent, evident by majority, 137(39.8%) of respondents. These findings thus

imply that firms practiced Packaging Integration with Logistics and Supply Chain Management at a small extent.

4.4.1 Summary statistics on Green Packaging

The study sought to determine the effect of Green Packaging on performance of Soft Drinks manufacturing firms in Kenya. The respondents rated their responses on a 5 Point Likert scale where 1.0 was rated as not at all, 2.0 was rated as small extent, 3.0 at moderate extent, 4.0 was rated at great extent and 5.0 was rated at very great extent. The information is presented in table 4.15 below

Table 4.15: Summary statistics on Green Packaging

Variables	N	Minimum	Maximum	Mean	Std. deviation
Eco-Design (ED)	344	1.00	5.00	2.1843	.93684
Eco Labelling (EL)	344	1.00	5.00	2.4536	1.23163
Packaging Integration with LSCM	344	1.00	5.00	2.3971	.51637
Valid N (listwise)	344				

Source: (Field Survey Data, 2023)

A scan on the summary statistic results above show that Eco-Labelling had the highest average mean (M=2.45) with the highest standard deviation of (STD 1.23) while Eco-Design had the lowest average mean (M=2.18) with the standard deviation of (STD=.937). packaging Integration with LSCM had an average mean of 2.40 with a standard deviation of (STD .516) as shown in the table above.

4.4.2 Effect of Green Packaging on Performance of Soft Drinks Manufacturing firms in Kenya

Second objective of the study sought to determine effect of Green Packaging on the performance of SDMFs in Kenya. To achieve this, the effect of each element of Green Packaging on each of the measures of performance, as indicated by Profitability, Cost Efficiency and Market Share was established followed by effect of Green Packaging on overall firm performance.

4.4.2.1 Green Packaging on Profitability Performance

A correlation between Green Packaging and Profitability performance was established through Pearson Product Moment Correlation analysis. The findings on the correlation between each of the elements of Green Packaging and Profitability performance are presented as shown in Table 4.16.

Table 4.16: Correlation between Green Packaging and Profitability Performance

		Profitability performance (ED)	Eco-Design	Eco Labelling (EL)	Packaging Integration with LSCM
Profitability performance	Pearson	1	.313**	.546**	.406**
	Correlation				
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Eco-Design (ED)	Pearson	.313**	1	.367**	.289**
	Correlation				
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Eco Labelling (EL)	Pearson	.546**	.367**	1	.206**
	Correlation				
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Packaging Integration with LSCM	Pearson	.406**	.289**	.206**	1
	Correlation				
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

**, Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

Results of the correlation analysis above indicates a moderate positive significant correlation between Eco-Labeling and Profitability performance ($r=.546$, $p<.05$) as well as Packaging Integration with Logistics and Supply Chain Management and Profitability performance ($r=.406$, $p<.05$) but a weak relationship between Eco-Design and Profitability performance ($r=.313$, $p<.05$). This means that Profitability performance is highly associated with Eco-Labeling and Packaging Integration with Logistics and Supply Chain Management but less

associated with Eco-Design, it can however be inferred that Profitability performance is positively associated with Green Packaging in SDMFs in Kenya.

A multiple regression analysis was carried out in order to establish effect of Green Packaging on Profitability performance This was modelled as follows;

$$Y_i = \beta_0 + \beta_1 X_{21i} + \beta_2 X_{22i} + \beta_3 X_{23i} + \varepsilon_i \dots \dots \dots (3.6)$$

Table 4.17: Model Results on Effect of Green Packaging on Profitability Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F	Changed	df1	df2
1	.625 ^a	.391	.386	.49040	.391	72.814	3	340	.000
a. Predictors: (Constant), Packaging Integration with LSCM, Eco Labelling (EL), Eco-Design (ED)									
Model				Unstandardized Coefficients		Standardized Coefficients		t	Sig.
				B	Std. Error	Beta			
1	(Constant)			1.855	.130			14.242	.000
	Eco-Design (ED)			.038	.031	.058		1.229	.220
	Eco Labelling (EL)			.236	.023	.464		10.143	.000
	Packaging Integration LSCM			.356	.054	.294		6.608	.000

a. Dependent Variable: Profitability performance

Source: (Field Survey Data, 2023)

The findings show that Green Packaging accounts for 39.1% variance in Profitability performance, $R^2=.391$, which is significant, $F(3, 340) = 72.814$, $p<.05$. This implies that Green Packaging accounts for a significant amount of variance in Profitability performance, although less than 50 percent. The findings further show that among the three subscales of Green Packaging, two had a positive and significant effect on Profitability performance while one had a positive non-significant effect on Profitability performance. Eco-Labeling had the strongest significant effect on Profitability performance ($\beta=.464$, $p<.05$) while Packaging Integration with Logistics and Supply Chain Management was second, with a positive and significant effect on Profitability performance ($\beta=.294$, $p<.05$) although weak. This means that both Eco-Labeling and Packaging Integration Logistics and Supply Chain Management had a positive and significant effect on Profitability performance. However, Eco-Design did not have a significant effect on Profitability performance.

4.4.2.2 Green Packaging on Cost Efficiency Performance

A correlation between Green Packaging and Cost Efficiency performance was analyzed through Pearson product moment correlation. The findings are presented as shown in Table 4.18.

Table 4.18: Correlation between Green Packaging and Cost Efficiency Performance

		Cost Efficiency performance	Eco-Design (ED)	Eco Labelling (EL)	Packaging Integration with LSCM
Cost Efficiency performance	Pearson Correlation	1	.241**	.482**	.385**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Eco-Design (ED)	Pearson Correlation	.241**	1	.367**	.289**
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Eco Labelling (EL)	Pearson Correlation	.482**	.367**	1	.206**
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Packaging Integration with LSCM	Pearson Correlation	.385**	.289**	.206**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings in Table 4.18 shows that there was a positive and significant correlation between Eco-Design and Cost Efficiency performance ($r=.241$, $p<.05$), Eco-Labeling and Cost Efficiency performance ($r=.482$, $p<.05$) and finally Packaging Integration with Logistics and Supply Chain Management and Cost Efficiency performance ($r=.385$, $p<.05$). From these findings, it is clear that the relationship between Green Packaging and Cost Efficiency is positive. This means that Cost Efficiency is positively associated with Green Packaging such that as SDMFs improve their Green Packaging practices, they become more Cost Efficient.

Standard multiple regression model was also carried out to establish the effect of each of the subscales of Green Packaging on Cost Efficiency level performance and also found out the

amount of variance in Cost Efficiency accounted for by Green Packaging. This was modelled as below;

$$Y_i = \beta_0 + \beta_2 X_{21i} + \beta_2 X_{22i} + \beta_2 X_{23i} + \varepsilon_i \dots \dots \dots (3.7)$$

The findings of the model results are presented as shown in Table 4.19 below.

Table 4.19: Model Results on Effect of Green Packaging on Cost Efficiency performance

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change in R Square	Change in F	df1	df2	Sig.	F
1	.564 ^a	.318	.312	.53197	.318	52.742	3	340	.000	

a. Predictors: (Constant), Packaging Integration with LSCM, Eco Labelling (EL), Eco-Design (ED)

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
	(Constant)	1.996	.141		14.124	.000
	Eco-Design (ED)	.000	.034	.001	.012	.991
1	Eco Labelling (EL)	.219	.025	.420	8.671	.000
	Packaging Integration with LSCM	.370	.058	.298	6.330	.000

a. Dependent Variable: Cost Efficiency performance

Source: (Field Survey Data, 2023)

Cost Efficiency performance showed a correlation to Green Packaging subscales (Eco-Design, Eco-Labeling and Packaging Integration with Logistics and Supply Chain Management) as indicated by R value (R=.564). The R² value (R²=.318) implied that Green Packaging accounted for 31.8% variance in Cost Efficiency performance, which was significant, F(3, 340) = 52.742, p < .05. The findings in Table 4.19 further indicates that Eco-Design did not have a significant contribution to Cost Efficiency performance, (β=.001, p < .05). However, Eco-Labeling (β=.420, p < .05) and Packaging Integration with Logistics and Supply Chain Management (β=.298, p < .05) had positive and significant effects on Cost Efficiency performance. This means that a positive improvement in both Eco-Labeling and Packaging Integration with Logistics and Supply Chain Management have positive and significant effects on Cost Efficiency performance.

4.4.2.3 Green Packaging on Market Share performance

The results of correlation between Green Packaging and Marker Share Performance are presented in Table 4.20

Table 4.20: Correlation between Green Packaging and Market Share

		Market Share	Eco-Design (ED)	Eco Labelling (EL)	Packaging Integration
Market Share	Pearson Correlation	1	.379**	.411**	.429**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Eco-Design (ED)	Pearson Correlation	.379**	1	.367**	.289**
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Eco Labelling (EL)	Pearson Correlation	.411**	.367**	1	.206**
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Packaging Integration with LSCM	Pearson Correlation	.429**	.289**	.206**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings in Table 4.20 shows that all the subscales of Green Packaging were positively correlated to Market Share performance. For instance, the correlation between Market Share and Eco-Design ($r=.379$, $p<.05$), Market Share and Eco-Labeling ($r=.411$, $p<.05$) and finally Market Share and Packaging Integration with Logistics and Supply Chain Management ($r=.429$, $p<.05$). Therefore, it is clear that Market Share is positively associated with all the three subscales of Green Packaging.

A standard multiple regression model was used to establish the effect of Green Packaging on Market Share. This was modelled in the following form;

$$Y_i = \beta_0 + \beta_2 X_{21i} + \beta_2 X_{22i} + \beta_2 X_{23i} + \varepsilon_i \dots \dots \dots (3.8)$$

The findings on the summary model results are presented as shown in Table 4.21.

Table 4.21: Model Results on Effect of Green Packaging on Market Share

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change in R Square	Change in F	df1	df2	Sig. F Change
1	.566 ^a	.321	.315	.73180	.321	53.551	3	340	.000
a. Predictors: (Constant), Packaging Integration with LSCM, Eco Labelling (EL), Eco-Design (ED)									
Model	Unstandardized Coefficients		Standardized Coefficients		t		Sig.		
	B	Std. Error	Beta						
(Constant)	.687	.194				3.536		.000	
Eco-Design (ED)	.175	.047	.185			3.748		.000	
Eco Labelling (EL)	.199	.035	.277			5.735		.000	
Packaging Integration with LSCM	.545	.080	.318			6.777		.000	

a. Dependent Variable: Market Share

Source: (Field Survey Data, 2023)

The findings show that Green Packaging was significantly correlated to Market Share ($R=.566$) and accounted for 32.1% variance in performance, which was significant, $F(3, 340) = 53.551$, $p < .05$. The findings show that among the three predictors of Green Packaging, Packaging Integration with Logistics and Supply Chain Management had the strongest significant contribution as compared to Eco-Labeling and Eco-Design. However, all the three variables had positive and significant effect on Market Share. More specifically, Packaging Integration with Logistics and Supply Chain Management ($\beta=.318$, $p < .05$) had a positive and significant effect on Market Share, Eco-Labeling ($\beta=.277$, $p < .05$) had a positive and significant effect on Market Share and finally Eco-Design ($\beta=.185$, $p < .05$) had a positive and significant effect on Market Share.

4.4.2.4 Green Packaging on Firm Performance

A further analysis to establish the effect of Green Packaging on performance whereby the mean performance was regressed against the three measures of Green Packaging (independent variable), that is Packaging Integration Logistics and Supply Chain Management, Eco-Design and Eco-Labeling. This was modelled as follows;

$$Y_i = \beta_0 + \beta_2 X_{21i} + \beta_2 X_{22i} + \beta_2 X_{23i} + \varepsilon_i \dots \dots \dots (3.9)$$

Table 4. 22: Model Results on Effect of Green Packaging on performance of Soft Drinks Manufacturing Firms in Kenya

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.654 ^a	.427	.421	.40534	.427	62.707	3	340	.000
a. Predictors: (Constant), PILSCM, Eco-Labeling, Eco-Design									
Coefficients ^a									
Model	Unstandardized Coefficients			Standardized Coefficients		T	Sig.		
	B	Std. Error		Beta					
1	(Constant)	1.994	.123			16.260		.000	
	Eco-Design	.075	.032	.122		2.324		.021	
	Labelling	.194	.022	.443		8.651		.000	
	PILSCM	.314	.049	.320		6.432		.000	
a. Dependent Variable: Performance									

KEY: PILSCM- Packaging integration with Logistics and Supply Chain Management Source: (Field Survey Data, 2023)

Regression analysis revealed a substantial relationship between Green Packaging and performance [R=654, F (3,340) =62.707, p<0.5]. The proportion of variance in performance of SDMFs explained by the independent variables (all three dimensions of Green Packaging) is 42.7% or R²=0.427. This is a large variation as explained in the model. The additional variations in organizational performance of 57.3% were explained by other external factors outside this model. The shrinkage value between R²=0.427 and adjusted R²=0.421 is 0.006 and shows that the suggested model generalizes quite well as the adjusted R² is not close to R². A shrinkage of less than 0.5 illustrates that the validity of the model is very good.

The findings also show that all the three independent variables, which include: Eco-design (β = 0.122, p <.05); eco-labelling (β = 0.443, p <.05) and Packaging Integration with Logistics and Supply Chain Management (β = .320, p <.05) had positive and significant effect on performance. The unstandardized β coefficient of Eco-Design shows that unit change in the level of Eco-Design causes 0.075 units increment in performance level and the change is significant as shown by the p-value while a unit change in Eco-Labelling and

Packaging Integration with Logistics and Supply Chain Management causes 0.194 and 0.314 units increase in organizational performance levels of Soft Drinks Manufacturing Firms in Kenya. Therefore, the regression results indicated that there was a statistically significant positive effect of Green Packaging on performance of Soft Drinks Manufacturing Firms in Kenya. Therefore, the null hypothesis stated as $H_{02}: \beta = 0$, Green Packaging has no effect on performance of Soft Drinks Manufacturing Firms in Kenya is rejected.

4.4.2.5 Summary Model Results on Effect of Green Packaging on Performance

The second objective of the study sought to establish effect of Green Packaging on performance. A standard multiple regression analysis was carried out involving mean subscales of Green Packaging and the mean subscales of firm performance. This was done in order to test the formulated hypothesis: H_{02} : *Green Packaging has no significant effect on performance of Soft Drinks Manufacturing Firms in Kenya*. This was modelled as follows;

$$Y_i = \beta_0 + \beta_2 X_{2i} + \varepsilon_i \dots \dots \dots (3.10)$$

Table 4.23: Summary Model on Effect of Green Packaging on Performance of Soft Drinks Manufacturing Firms in Kenya

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.628 ^a	.394	.392	.41524	.394	165.401	1	342	.000
a. Predictors: (Constant), Green Packaging									
b. Dependent Variable: mean performance									
Coefficients ^a									
Model	Unstandardized Coefficients			Std. Error		Standardized Coefficients	T		Sig.
	B					Beta			
1	(Constant)	2.182		.098			22.234		.000
	Green Packaging	.517		.040		.628	12.861		.000
a. Dependent Variable: mean performance									

Source: (Field Survey Data, 2023)

The findings in Table 4.23 indicates that Green Packaging accounts for 39.4% variance in performance, $R^2 = .394$, which was significant, $F(1, 342) = 165.401$, $p < .05$. The findings also show that Green Packaging has a positive and significant effect on performance

($\beta=.628$, $p<.05$). This is a strongly significant effect indicating a strong magnitude of change in performance by 0.628 units as a result of a one-unit improvement in Green Packaging. These results were further illustrated as shown in equation 4.10.

$$Y=2.182+0.517X_{\text{green_packaging}} \dots\dots\dots(4.10)$$

The equation shows that the constant term, is high, implying that even without including Green Packaging in the model, there would be a significant performance by 2.182 units. However, including Green Packaging improves performance by 0.517.

Findings of the study that Green Packaging has a significant positive effect ($\beta=.628$, $p<.05$) and accounts for 39.4% variance in performance ($R^2=.394$) agrees with other empirical evidence. To begin with, Zailani et al. (2015) in the lens of Resource-Based View (RBV) theory studied effect of sustainable packaging on supply chain performance of manufacturing firm in Penang, Malaysia. Targeting 700 managers through a cross sectional survey, their results revealed that sustainable packaging strongly influenced supply chain performance of firms. In a South African case, Maziriri (2020) study on Green Packaging and Green Advertising as the precursors of competitive advantage and organization performance in South African small and medium enterprises findings resonate with the current study findings. Additionally, Sambu (2016) gives discussions that utilize precincts of institutional and Resource Based View theories to advance arguments that Green Packaging remain imperative for firm performance. Guided by a null hypothesis: H_{01} : Green Packaging has no significant effect on business performance of manufacturing firms in the Nairobi County of Kenya, Sambu uses a primary quantitative paradigm on a target population of 133 managers working for 47 manufacturing firms to show that indeed, Green Packing has a significant positive effect on business performance.

4.5. Green Distribution

Third objective in the study sought to establish the effect of Green Distribution on the performance of SDMFs in Kenya. The responses were based on a 5-point Likert scale about statements on the indicators of Green Distribution. 1.0 was rated as Not at All, 2.0 was rated as Small Extent, 3.0 at Moderate Extent, 4.0 was rated at Great Extent and 5.0 was rated at

Very Great Extent in its influence on performance. The results are presented in the table below

Table 4.24: Descriptive statistics results on Green Distribution

Environmentally Responsible Fleet Management	Frequency and percentage distribution of Responses					Σfi
	1	2	3	4	5	
Uses more fuel-efficient vehicles or alternative energy sources/hybrid fuel technology sources resulting in low GHG emission and more environmentally friendly vehicles	14(4.1)	34(9.9)	152(44.2)	137(39.8)	7(2)	344
Uses good information system and innovative management to ensure more efficient loading, scheduling and routing.	8(2.3)	34(9.9)	166(48.3)	126(36.6)	10(2.9)	344
Uses logistics firms that abide to environmentally friendly principles or have EMS certification (e.g. ISO 14001, BS7750, EMAS), in case transport is outsourced.	6(1.7)	33(9.6)	5(1.5)	288(83.7)	12(3.5)	344
Proper maintenance programs of vehicles to keep them in safe and efficient working condition	11(3.2)	35(10.2)	5(1.5)	260(75.6)	33(9.6)	344
Sale of vehicles that have reached their end of useful life rather than leave them to fill the parking yard.	7(2)	9(2.6)	3(0.9)	5(1.5)	320(93)	344
Eco-Distribution Management						
Optimization of transport capacity through consolidation and scheduling (distribute products together rather than in smaller batches to ensure full vehicle loads for efficiency).	5(1.5)	11(3.2)	7(2)	316(91.9)	5(1.5)	344
Delivers products directly to the user site.	15(4.4)	199(57.8)	95(27.6)	24(7)	11(3.2)	344
Backhaul management to ensure high vehicle utilization (consolidate freight in case where used material and packaging is to be shipped back to the firm).	9(2.6)	26(7.6)	181(52.6)	66(19.2)	62(18)	344
Located near customers to reduce resources consumed in getting the product to them.	2(0.6)	26(7.6)	280(81.4)	31(9)	5(1.5)	344
Implements technologies to reduce dependence on fossil fuels e.g. cruise control, reductions in left hand turns, GPS units, and automatic engine shut down devices	3(0.9)	2(0.6)	276(80.2)	56(16.3)	7(2)	344
Eco-Network Design						

Configuration of suppliers and distribution networks	2(0.6)	331(96.2)	6(1.7)	2(0.6)	3(0.9)	344
Routing systems to minimize travel distances	2(0.6)	331(96.2)	6(1.7)	2(0.6)	3(0.9)	344
Use of more direct shipping routes	2(0.6)	331(96.2)	6(1.7)	2(0.6)	3(0.9)	344
Load freight using 'carpooling transportation' (cooperative dispatching mode)	11(3.2)	278(80.8)	50(14.5)	1(0.3)	4(1.2)	344
Reverse Logistics network design to reduce transportation	23(6.7)	290(84.3)	9(2.6)	11(3.2)	11(3.2)	344

Source: (Field Survey Data, 2023)

The descriptive statistics for Environmentally-Responsible Fleet Management show that firms practiced the use of more fuel-efficient vehicles or alternative energy sources/hybrid fuel technology sources resulting in low GHG emission and more environmentally friendly vehicles to a Moderate Extent as evident by the majority of the respondents 152(44.2%). The findings further indicate that firms practiced use of a good information system and innovative management to ensure more efficient loading, scheduling and routing to a Moderate Extent as indicated by the majority of the respondent 166(48.3%). Using logistics firms that abide to environmentally friendly principles or have EMS certification (e.g. ISO 14001, BS7750, EMAS), in case transport is outsourced was practiced to a Great Extent reflected by majority of the respondents 288(83.7%). This implies that firms required confirmation if the logistics firms did abide to environment friendly principles or have EMS certification (e.g. ISO 14001, BS7750 and EMAS). Further findings revealed that firms practiced proper maintenance programs of vehicles to keep them in safe and efficient working condition to a Great Extent, 260(75.6%). Sale of vehicles that have reached their end of useful life rather than leave them to fill the parking yard was practiced by firms to a Very Great Extent as revealed by 320(93.0%) of the respondents.

Considering Eco-Distribution Management for Green Distribution, it is evident that optimization of transport capacity through consolidation and scheduling (distribute products together rather than in smaller batches to ensure full vehicle loads for efficiency) was practiced to a Great Extent as indicated by majority, 316(91.9) of the respondents. Majority, 199(57.8%) of the respondents indicated that firms directly deliver products to the user and this is practiced to a Small Extent. This implies that firms relied on distributors most of the time prefer to deliver products to their users. From the findings it is clear that backhauling

management to ensure high vehicle utilization (consolidate freight in case where used material and packaging is to be shipped back to the firm) is practiced to a Moderate Extent as indicated by majority 181(52.6%) of the respondents. Locating near customers to reduce resources consumed in getting the product to them is practiced by firms to a Moderate Extent as revealed by majority, 280(81.4%) of the respondents. This implies that firms occasionally located near customers to reduce resources consumed in getting the product to them. The findings also clearly show that firms practiced implementing technologies to reduce dependence on fossil fuels e.g. cruise control, reductions in left hand turns, GPS units, and automatic engine shut devices to a Moderate Extent as indicated by 276(80.2%) of the respondents.

Findings from the descriptive statistics on Eco-Network Design indicates that firms practiced configuration of suppliers and distribution networks to a Small Extent as sighted by 331(96.2%). This implies that firms rarely consider configuration of suppliers and distribution networks. From the findings, to a Small Extent firms practiced routing systems to minimize travel distances by a majority 331(96.2%) of the respondents. Furthermore, from the findings, firms practiced the use of more direct shipping routes to a Small Extent as indicated by majority 331(96.2%) and loaded freight using ‘carpooling transportation’ (cooperative dispatching mode) was practiced to a Small Extent as revealed by majority 278(80.8%) of the respondent. Reverse Logistics network design to reduce transportation was also practiced to a Small Extent as reported by 290(84.3%) of the respondents.

4.5.1 Summary statistics on Green Distribution

The study sought to determine the effect of Green Distribution on performance of Soft Drinks Manufacturing Firms in Kenya. The respondents rated their responses on a 5 Point Likert scale 1.0 was rated as not at all, 2.0 was rated as small extent, 3.0 at moderate extent, 4.0 was rated at great extent and 5.0 was rated at very great extent in its influence on the performance of firms in the Soft Drinks industry. Summary results on Green Distribution is presented in table 4.25 below

Table 4.25: Summary statistics on Green Distribution

Variables	N	Minimum	Maximum	Mean	Std. deviation
Environmentally-Responsible Fleet Management	344	2.06	5.00	3.4940	.54451
Eco Distribution Management	344	2.39	5.00	3.3703	.48289
Eco Network Design	344	1.67	5.00	3.5840	.48935
Valid N (listwise)	344				

Source: (Field Survey Data, 2023)

A scan on the summary statistic results above show that Eco Network Design had the highest average mean (M=3.58) with standard deviation of (STD .489) while Eco Distribution Management had the lowest average mean (M=3.37) with the standard deviation of (STD=.483). Environmentally-Responsible Fleet Management had an average mean of 3.49 with a standard deviation of (STD .544) as shown in the table above.

4.5.2 Effect of Green Distribution on Performance of Soft Drinks Manufacturing Firms in Kenya

Third objective of the study sought to establish the effect of Green Distribution on performance of SDMFs in Kenya. This entailed establishing the effect of Green Distribution on each of the measures of performance (Profitability, Cost Efficiency, Market Share) followed by an analysis on effect of Green Distribution (Environmentally-Responsible Fleet Management, Eco-Distribution Management, Eco Network Design) on the overall firm performance.

4.5.2.1 Green Distribution on Profitability performance

The Pearson product moment correlation analysis was carried out to establish correlation between Green Distribution on Profitability performance. Profitability performance was correlated with the three subscales of Green Distribution practices. The results are presented in Table 4.26.

Table 4.26: Correlation between Green Distribution and Profitability Performance

		Profitability performance	Environmentally-Responsible Fleet Management	Eco Distribution Management	Eco Network Design
Profitability performance	Pearson Correlation	1	.551**	.521**	.436**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Environmentally-Responsible Fleet management	Pearson Correlation	.551**	1	.327**	.733**
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Eco Distribution Management	Pearson Correlation	.521**	.327**	1	.388**
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Eco Network Design	Pearson Correlation	.436**	.733**	.388**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

**. Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings show that that there is a positive and significant correlation between Profitability performance and Environmentally-Responsible Fleet Management ($r=.551$, $p<.05$), Profitability performance and Eco-Distribution Management ($r=.521$, $p<.05$) and finally between Profitability performance and Eco-Network Design ($r=.436$, $p<.05$).

To establish the effect of Green Distribution practices on Profitability performance, a multiple regression model was used. This was modelled as follows;

$$Y_i = \beta_0 + \beta_1 X_{31i} + \beta_2 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.11)$$

Table 4.27: Model Results on Effect of Green Distribution on Profitability Performance

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change Statistics	F	df1	df2	Sig.
1	.659 ^a	.435	.430	.47245	.435	87.225	3	340	.000

a. Predictors: (Constant), Environmentally-Responsible Fleet management, Eco Distribution Management, Eco Network Design

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Beta		
1	(Constant)		.058	.223
			.258	.796

Environmentally-Responsible Fleet Management	.533	.069	.464	7.722	.000
Eco-Distribution Management	.506	.057	.391	8.814	.000
Eco-Network Design	-.071	.079	-.056	-.907	.365

a. Dependent Variable: Profitability performance

Source: (Field Survey Data, 2023)

The findings show that Green Distribution accounts for 43.5% significant variance in Profitability performance of SDMFs. The model significance is shown by the F statistics value, $F(2,340) = 87.225$, $p < .05$, which implies that the results are not by chance but as a result of careful model fit. The findings show that from the three subscales of Green Distribution, two had positive and significant effect on Profitability performance while one did not significantly affect Profitability performance. Results shows that Environmentally Responsible Fleet Management ($\beta = .464$, $p < .05$) and Eco Distribution Management ($\beta = .391$, $p < .05$) had positive and significant effect on Profitability performance. However, Eco Network Design ($\beta = -.056$, $p > .05$) did not have a significant effect on Profitability performance.

4.5.2.2 Green Distribution on Cost Efficiency performance

This was accomplished by carrying out bivariate correlations using Pearson product moment correlation. Table 4.28 shows results of the correlation between Cost Efficiency performance and the three sub-scales of Green Distribution practices.

Table 4.28: Correlation between Green Distribution and Cost Efficiency performance

		Cost Efficiency performance	Environmentally-Responsible Fleet management	Eco Distribution Management	Eco Network Design
Cost Efficiency performance	Pearson Correlation	1	.496**	.503**	.433**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Environmentally-Responsible Fleet Management	Pearson Correlation	.496**	1	.327**	.733**
	Sig. (2-tailed)	.000		.000	.000

	N	344	344	344	344
Eco-Distribution Management	Pearson Correlation	.503**	.327**	1	.388**
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Eco-Network Design	Pearson Correlation	.433**	.733**	.388**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings on the relationship between Cost Efficiency performance and Green Distribution practices shows that there was a higher correlation between Eco-Distribution management as compared to Environmentally-Responsible Fleet Management and Eco-Network Design correlation coefficients with Cost Efficiency performance. More specifically, Eco-Distribution Management was positively and significantly ($r=.503$, $p<.05$) correlated to Cost Efficiency performance followed by the correlation between Environmentally-Responsible Fleet Management and Cost Efficiency performance ($r=.496$, $p<.05$). Finally, the least correlation was between Eco-Network Design and Cost Efficiency performance ($r=.433$, $p<.05$). Thus, it can be inferred that Cost Efficiency performance is positively associated with each of the subscales of Green Distribution practices.

A standard multiple regression model was used to establish the magnitude of change in Cost Efficiency performance as a result of change in Green Distribution practices as well as the overall variance in Cost Efficiency performance that was accounted for by Green Distribution practices. This was modelled as;

$$Y_i = \beta_0 + \beta_3 X_{31i} + \beta_3 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.12)$$

Table 4.29: Model results on Effect of Green Distribution on Cost Efficiency Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F	Changedf1	df2	Sig. F Change
1	.613 ^a	.376	.371	.50857	.376	68.376	3	340	.000

a. Predictors: (Constant), Eco Network Design, Eco Distribution Management, Environmentally-responsible Fleet management

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

	(Constant)	.153	.240		.637	.525
1	Environmentally-Responsible Fleet Management	.414	.074	.351	5.564	.000
	Eco-Distribution Management	.500	.062	.377	8.086	.000
	Eco-Network Design	.038	.085	.029	.451	.652

a. Dependent Variable: Cost Efficiency performance

Source: (Field Survey Data, 2023)

Table 4.29 results shows that there was a high multiple correlation ($R=.613$) between the predictors (Green Distribution practices) variables and Cost Efficiency performance. This led to a coefficient of determination of ($R^2 = .376$, $p < .05$) which is simply the amount of variance in Cost Efficiency performance that was accounted for by Green Distribution practices. These findings were statistically significant as indicated by a high F statistic, $F(3, 340) = 68.376$, $p < .05$, implying that the model was well fit and thus not by chance. Further findings on the contribution of each of the predictors, (Eco-Network Design, Eco-Distribution Management, Environmentally-Responsible Fleet management) on Cost Efficiency performance using model coefficients are presented. From the results, it is clear that Eco-Distribution Management had the strongest unique contribution ($\beta = .377$, $p < .05$) to Cost Efficiency performance. This was followed by Environmentally-Responsible Fleet Management ($\beta = .351$, $p < .05$) which was also positive and significant. However, Eco-Network design did not significantly contribute to Cost Efficiency performance. Therefore, it can be inferred that among the three subscales of Green Distribution practices in SDMFs, Eco-Distribution Management and Environmentally-Responsible Fleet Management have a notable contribution to Cost Efficiency performance.

4.5.2.3 Green Distribution on Market Share Performance

Pearson Product moment correlation analysis established the bivariate correlation between Market Share performance and each of the elements of Green Distribution practices. The findings are presented as shown in Table 4.30.

Table 4.30: Correlation between Green Distribution and Market Share Performance

Correlations

		Market Share	Environmentally-Responsible Fleet Management	Eco-Distribution Management	Eco-Network Design
Market Share	Pearson Correlation	1	.459**	.562**	.490**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Environmentally-Responsible Fleet Management	Pearson Correlation	.459**	1	.327**	.733**
	Sig. (2-tailed)	.000		.000	.000
	N	344	344	344	344
Eco-Distribution Management	Pearson Correlation	.562**	.327**	1	.388**
	Sig. (2-tailed)	.000	.000		.000
	N	344	344	344	344
Eco-Network Design	Pearson Correlation	.490**	.733**	.388**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

A significant correlation coefficient was noted between each of the subscales of Green Distribution practices and Market Share performance. To start with, Eco-Distribution Management and Market Share were significantly correlated ($r=.562$, $p<.05$). This was followed by the correlation between Eco-Network Design and Market Share ($r=.490$, $p<.05$) and finally Environmentally-Responsible Fleet Management and Market Share ($r=.459$, $p<.05$). Examining all these correlations, it can be noted that they were moderate, ranging between 0.459 and 0.562. This means that Market Share of SDMFs is positively associated with Green Distribution practices.

In addition, a further analysis was carried out to establish the effect of each of the subscales underlying Green Distribution practices on Market Share performance. This was modelled in the form;

$$Y_i = \beta_0 + \beta_3 X_{31i} + \beta_3 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.13)$$

Table 4.31: Model Summary Results on Effect of Green Distribution on Market Share performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Changed	df1	df2	Sig. F Change
1	.646 ^a	.417	.412	.67784	.417	81.179	3	340	.000

a. Predictors: (Constant), Eco Network Design, Eco Distribution Management, Environmentally-responsible Fleet management

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-2.042	.320		-6.387	.000
Environmentally-responsible Fleet management	.285	.099	.175	2.872	.004
Eco Distribution Management	.785	.082	.429	9.525	.000
Eco Network Design	.353	.113	.196	3.125	.002

a. Dependent Variable: Market Share

Source: (Field Survey Data, 2023)

The findings show that Green Distribution practices accounted for 41.7% variance in Market Share, which was significant, $F(3, 340) = 81.179, p < .05$. The remaining variance was explained by other variables not in the model. After adjusting the R square value through a shrinkage process, an adjusted R square value of 0.412 was obtained. It can therefore be noted that Green Distribution practices accounts for a significant amount of variance in Market Share of SDMFs. The findings in Table 4.31 also shows that Eco-Distribution Management had the highest significant contribution to Market Share ($\beta = .429, p < .05$) followed by Eco-Network Design ($\beta = .196, p < .05$) and finally Environmentally-Responsible Fleet Management ($\beta = .175, p < .05$). It can generally be noted that all the subscales of Green Distribution practices positively and significantly contributed to Market Share such that improving on these practices led to an increase in the share of market that SDMFs had.

4.5.2.4 Green Distribution on performance of Soft Drinks Manufacturing Firms in Kenya

An analysis of effect of Green Distribution (bearing all elements) on overall firm performance was carried out by regressing mean performance against subscales of Green Distribution through a multiple regression model in the following form;

$$Y_i = \beta_0 + \beta_1 X_{31i} + \beta_2 X_{32i} + \beta_3 X_{33i} + \varepsilon_i \dots \dots \dots (3.14)$$

Table 4.32: Model Results on Effect of Green Distribution on performance of Soft Drinks Manufacturing Firms in Kenya

Model Summary			Change Statistics
Model	R	R Square	

			Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.761 ^a	.580	.575	.34733	.580	115.810	3	340	.000
a. Predictors: (Constant), mean Eco Network Design, mean Eco Distribution Management, mean ERDP Coefficients ^a									
Model			Unstandardized Coefficients			Standardized Coefficients	t		Sig.
			B	Std. Error		Beta			
	(Constant)		-.292	.200			-1.463		.145
1	Environmentally-Responsible Fleet Management		.195	.056		.207	3.491		.001
	Eco Distribution Management		.454	.047		.407	9.627		.000
	Eco Network Design		.408	.065		.380	6.301		.000

a. Dependent Variable: mean performance

Source: (Field Survey Data, 2023)

Regression analysis revealed a substantial relationship between Green Distribution and performance [$R=761$, $F(3,340)=118.810$, $p<0.5$]. The proportion of variance in performance of SDMFs explained by the independent variables (all three dimensions of Green Packaging) is 58.0% or $R^2=0.580$. This is a large variation as explained in the model. The additional variations in organizational performance of 42.0% were explained by other external factors outside this model. The shrinkage value between $R^2=0.580$ and adjusted $R^2=0.575$ is 0.005 and shows that the suggested model generalizes quite well as the adjusted R^2 is not close to R^2 . A shrinkage of less than 0.5 illustrates that the validity of the model is very good.

The findings also show all the three independent variables, which include: Environmentally-Responsible Fleet Management ($\beta = 0.207$, $p < .05$); Eco-Distribution Management ($\beta = 0.407$, $p < .05$) and Eco-Network Design ($\beta = .380$, $p < .05$) had positive and significant effect on performance. The unstandardized β coefficient of Environmentally-Responsible Fleet Management shows that unit change in the level of Environmentally-Responsible Fleet Management causes 0.195 units increment in firm performance and the change is significant as shown by the p-value while a unit change in Eco-Distribution Management and Eco-Network Design causes 0.454 and 0.408 units increase in performance of SDMFs in Kenya. Therefore, the regression results indicated that there was a statistically significant positive effect of Green Distribution on performance of SDMFs in Kenya, therefore the hypothesis

is overruled. It is thus determined that there is a considerably positive effect of Green Distribution on performance of SDMFs in Kenya.

4.5.2.5 Summary Model Results on Effect of Green Distribution on Performance

The third objective of the study sought to establish the effect of Green Distribution on performance of Soft Drinks Manufacturing Firms in Kenya. The hypothesis H_{03} : *Green Distribution has no effect on performance of Soft Drinks Manufacturing Firms in Kenya* was formulated. To test the hypothesis, a simple linear regression model entailing the regression of mean performance on the mean Green Distribution practices (Environmentally-Responsible Fleet Management, Eco-Distribution Management, Eco-Network Design) was carried out.

$$Y_i = \beta_0 + \beta_3 X_{3i} + \varepsilon_i \dots \dots \dots (3.15)$$

Table 4.33: Summary Model on Effect of Green Distribution on performance of Soft Drinks Manufacturing Firms in Kenya

Model Summary ^b									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.747 ^a	.558	.557	.35458	.558	321.169	1	342	.000
a. Predictors: (Constant), Green Distribution									
b. Dependent Variable: mean performance									
Coefficients ^a									
Model	Unstandardized Coefficients			Standardized Coefficients		t	Sig.		
	B	Std. Error	Beta						
1	(Constant)	-.104	.197			-.530	.597		
	Green Distribution	.999	.056	.747		17.921	.000		
a. Dependent Variable: mean performance									

Source: (Field Survey Data, 2023)

The model summary results indicate that Green Distribution accounted for 55.8% variance in performance, R Square=.558, which was significant and not by chance, F (1,342) =321.169, $p < .05$. The findings also show that Green Distribution has a positive and significant effect on performance ($\beta = .747$, $p < .05$). This is a strongly significant effect indicating a strong magnitude of change in performance by 0.747 units as a result of a unit improvement in Green Distribution. These results were further illustrated as shown in equation 4.15 using the third model equation.

$$Y = -0.104 + 0.999X_{\text{green_distribution}} \dots\dots\dots(4.15)$$

The equation shows that the constant term, is high, implying that even without including Green Distribution in the model, there would be significant performance by .104 units.

Results of the study on Green Distribution ($R^2=.558$; $\beta=.747$, $p<.05$) showing that Green Distribution has a significant positive effect and explains 55.8% variance in performance agrees with results of previous other studies. The current study findings attune to the findings by Hutomo et al. (2018) who in a survey of fisheries firms in Malaysia and Indonesia carried out a study on mediating role of organizational learning on Green Distribution and sustainability performance. This study sampled 325 respondents by using a simple random sample technique to show that. Their results pin pointed that GSCM practices, specifically Green Distribution had significant positive effect on performance. Further to these discussions, Kirunga & Kihara (2018) on Influence of Green Distribution practices on environmental performance of Chemical manufacturing firms in Kenya opined that all elements of Green Distribution (Green Packaging, green transportation, green storage, eco-labeling) had significant positive effect on performance. A study by Yusuf (2020) revealed also that Green Distribution has a positive and significant influence on performance of manufacturing firms thus confirming the current study findings. This means that the hypothesis testing revealed sufficient evidence to reject the null hypothesis. Therefore, we embrace an alternative hypothesis and conclude that Green Distribution has a positive and significant effect on performance.

4.6 Environmentally-Oriented Reverse Logistics

The study sought to determine the effect of Environmentally-Oriented Reverse Logistics Practice on performance of SDMFs in Kenya. The respondents rated their responses on a 5 Point Likert scale where the weight of 1.0 was rated as Not at All, 2.0 was rated as Small Extent, 3.0 at Moderate Extent, 4.0 was rated at Great Extent and 5.0 was rated at Very Great Extent in its influence on the performance of firms in the Soft Drinks industry. The information is presented in table 4.34 below

Table 4.34: Descriptive statistics results on Environmentally-Oriented Reverse Logistics

Innovations	Frequency and percentage distribution of Responses					Σf_i
	1	2	3	4	5	
Maintains a database on the quantities and value of material and end of life products or packaging collected from consumers (formalization).	5(1.5)	254(73.8)	73(21.2)	5(1.5)	7(2.0)	344
Creates its own systems and procedures to monitor reverse flows of materials (customization).	10(2.9)	241(70.1)	29(8.4)	51(14.8)	13(3.8)	344
Has its own way of handling returns (flexibility).	11(3.2)	7(2)	264(76.7)	58(16.9)	4(1.2)	344
Developed information systems ability to handle EORL activities (information-related ability).	5(1.5)	254(73.8)	23(6.7)	58(16.9)	4(1.2)	344
Created a connected marketing-operations interface to handle EORL activities (functional integration)	6(1.7)	6(1.7)	268(77.9)	59(17.2)	5(1.5)	344
Product Recovery indicator						
Sets up systems to recover used products and packaging material for reuse and recycling e.g. installation of collection points at the point of purchase.	6(1.7)	249(72.4)	34(9.9)	48(14)	7(2)	344
Co-operates with vendors to encourage re-use of packaging materials.	10(2.9)	249(72.4)	30(8.7)	48(14)	7(2)	344
Spreads awareness among customers and the general public on the firm's product or packaging return material flow or take-back policy.	3(0.9)	3(0.9)	281(81.7)	54(15.7)	3(0.9)	344
Employs individuals or firms to collect waste generated by the firm's products.	13(3.8)	13(3.8)	293(85.2)	3(0.9)	22(6.4)	344
Encourages consumers, employees and the general public to return packaging materials for recycling purposes through rebates, bonuses and special incentives.	3(0.9)	15(4.4)	261(75.9)	9(2.6)	56(16.3)	344
Re-manufacture						
Set up compression molding plant for returns especially PET plastics that use Polyethylene Terephthalate materials in molding process.	246(71.5)	17(4.9)	34(9.9)	44(12.8)	3(0.9)	344
Trains employees on remanufacturing processes.	3(0.9)	260(75.6)	14(4.1)	64(18.6)	3(0.9)	344
Performs redesign of products for reuse.	6(1.7)	225(65.4)	12(3.5)	71(20.6)	30(8.7)	344
Designs packaging that can be Re-manufactured.	34(9.9)	31(9)	49(14.2)	199(57.8)	31(9)	344

Relies on technology for depolymerization of PET wastes that uses no energy.	18(5.2)	227(66)	19(5.5)	70(20.3)	10(2.9)	344
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Source: (Field Survey Data, 2023)

The results in Table 4.34 shows majority, 254(73.8%) of the respondent reported that their firms to a small extent maintained a database on the quantities and value of material and end of life products or packaging collected from consumers (formalization). Majority, 241(70.1%) of the respondent also revealed that their firms did little (to a small extent) on creating their own systems and procedures to monitor reverse flows of materials (customization). A majority of respondents, 264 (76.7%) reported that their firms to a moderate extent had their own way of handling returns (flexibility). Firms to a small extent have developed information systems with ability to handle EORL activities (information-related ability), as indicated by majority, 254(73.8%) of the respondents. The findings also clearly indicate that firms to a moderate extent have created a connected marketing-operations interface to handle EORL activities (functional integration), this is reported by a majority of the respondents, 268(77.9%).

On Product Recovery indicator, majority, 249(72.4%) of the revealed that their firms did not set up their own systems to recover used products and packaging material for reuse and recycling e.g. installation of collection points at the point of purchase. From the findings it emerged that firms to a small extent co-operates with vendors to encourage re-use of packaging materials as indicated by majority 249(72.4%) of the respondent. Findings however indicates that firms to a moderate extent spread awareness among customers and the general public on their product or packaging return material flow or take-back policy, as revealed by majority, 281(81.7%) of respondents. In addition, the findings by majority, 293(85.2%), indicated that firms to a moderate extent employed individuals or firms to collect waste generated by the firm's products reported. Finally, the findings clearly indicate that to a moderate extent 261(75.9%), firms encourages consumers, employees and the general public to return packaging materials for recycling purposes through rebates, bonuses and special incentives.

The indicator on re-manufacturing denotes that it emerges that firms did not set up compression molding plant for returns especially PET plastics that use Polyethylene Terephthalate materials in molding process as indicated by 246(71.5%) of the respondents. Majority 260(75.6%) of respondents reported that their firms to a Small Extent train employee on re-manufacturing processes. It is also evident from the findings that firms to a Small Extent, 225(65.4%) perform redesign of products for reuse. However, majority, 199(57.8%) reported that firms to a Great Extent design packaging that can be re-manufactured but to a small extent, 227(66.0%) relied on technology for depolymerization of PET wastes that uses no energy.

4.6.1 Summary Statistics on Environmentally-Oriented Reverse Logistics

The study further established the extent to which the indicators of Environmentally-Oriented Reverse Logistics Practices influence the performance of firms in the Soft Drinks industry. The responses were based on a 5-point Likert scale about statements on the indicators of Environmentally-Oriented Reverse Logistics. The respondents rated their responses on a 5 Point Likert scale where 1.0 was rated as Not at All, 2.0 was rated as Small Extent, 3.0 at Moderate Extent, 4.0 was rated at Great Extent and 5.0 was rated at Very Great Extent in its influence on the performance of firms in the Soft Drinks industry. The results are presented in Table 4.35.

Table 4.35: Summary Statistics on Environmentally-Oriented Reverse Logistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Reverse Logistics	344	1.80	5.00	3.1087	.59509
Innovation					
Product Recovery	344	1.00	5.00	3.1391	.73442
Re-manufacture	344	1.00	5.00	2.9091	.81653
Valid N (listwise)	344				

Source: (Field Survey Data, 2023)

A scan on the summary statistic results above show that Product Recovery had the highest average mean (M=3.139) with standard deviation of (STD .734) while Re-manufacture had the lowest average mean (M=2.909) with the standard deviation of (STD=.817). Reverse

Logistics Innovation had an average mean of 3.109 with a standard deviation of (STD .595) as shown in the table above.

4.6.2 Effect of Environmentally-Oriented Reverse Logistics on Performance of Soft Drinks Manufacturing Firms

Fourth objective of the study sought to establish the effect of Environmentally-Oriented Reverse Logistics on performance of Soft Drinks Manufacturing Firms. Firstly, the study established the effect of Environmentally-Oriented Reverse Logistics on each of the measures of performance (Profitability, Cost Efficiency, Market Share) followed by an analysis on effect of Environmentally-Oriented Reverse Logistics on the overall firm performance.

4.6.2.1 Environmentally-Oriented Reverse Logistics on Profitability Performance

First correlation was carried out between Environmentally-Oriented Reverse Logistics practice and Profitability performance through Pearson Product moment correlation. The findings are presented as shown in Table 4.36.

Table 4.36: Correlation between Environmentally-Oriented Reverse Logistics and Profitability Performance

		Profitability performance	Reverse Logistics Innovation	Product Recovery	Re- manufacture
Profitability performance	Pearson Correlation	1	.364**	.256**	.322**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Reverse Logistics Innovation	Pearson Correlation	.364**	1	.032	.478**
	Sig. (2-tailed)	.000		.557	.000
	N	344	344	344	344
Product Recovery	Pearson Correlation	.256**	.032	1	.027
	Sig. (2-tailed)	.000	.557		.621
	N	344	344	344	344
Re-manufacture	Pearson Correlation	.322**	.478**	.027	1
	Sig. (2-tailed)	.000	.000	.621	
	N	344	344	344	344

**. Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings in Table 4.36 shows that there was a positive and significant relationship between Profitability performance and Reverse Logistics Innovation ($r=.364$, $p<.05$). This

means that Profitability performance was positively associated with Reverse Logistics Innovation. The findings also show that there was a positive and significant correlation between Re-manufacture and Profitability performance ($r=.322$, $p<.05$) and finally between Product Recovery and Profitability performance ($r=.256$, $p<.05$), thus Profitability performance was positively associated with both Product Recovery and Re-manufacture.

Further findings on the effect of Environmentally-Oriented Reverse Logistics Practice on Profitability performance were presented using standard multiple regression model, modelled in the following form;

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_4 X_{42i} + \beta_4 X_{43i} + \varepsilon_i \dots \dots \dots (3.16)$$

Results are presented in Table 4.37

Table 4.37: Model Results on Effect of Environmentally-Oriented Reverse Logistics on Profitability Performance

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change in the R Square	Change in F	df1	df2	Sig. Change	F
1	.469 ^a	.220	.213	.55510	.220	31.953	3	340	.000	
a. Predictors: (Constant), Re-manufacture, Product Recovery, Reverse Logistics Innovation										
Model			Unstandardized Coefficients		Standardized Coefficients		t	Sig.		
			B	Std. Error	Beta					
	(Constant)		1.431	.204			7.001		.000	
1	Reverse Logistics Innovation		.280	.057	.266		4.884		.000	
	Product Recovery		.207	.041	.243		5.070		.000	
	Re-manufacture		.144	.042	.188		3.449		.001	
a. Dependent Variable: Profitability performance										

Source: (Field Survey Data, 2023)

The findings show that Environmentally-Oriented Reverse Logistics accounted for only 22.0% variance in Profitability performance, ($R^2=.220$) which was significant, $F(3, 340) = 31.953$, $p<.05$. Further findings on the effect of each of the subscales of Environmentally-Oriented Reverse Logistics are also presented. From the findings indicated in Table 4.37, it is clear that all the predictors had a positive and significant effect on Profitability performance. This is indicated by each of the specific predictors starting with effect of

Reverse Logistics Innovation on performance ($\beta=.266$, $p<.05$) which was positive and significant. The second was Product Recovery ($\beta=.243$, $p<.05$) and finally Re-manufacture ($\beta=.188$, $p<.05$) which was also positive and significant. Whereas the effect of these predictors was positive and significant, they were weak. It can thus be noted that the effect of Environmentally-Oriented Reverse Logistics on Profitability performance was positive and significant but weak.

4.6.2.2 Environmentally-Oriented Reverse Logistics on Cost Efficiency Performance

The Pearson product moment correlation was carried out to establish the strength and magnitude of correlation between Environmentally-Oriented Reverse Logistics practices and Cost Efficiency performance. The findings are presented as shown in Table 4.38.

Table 4.38: Correlation between Environmentally-Oriented Reverse Logistics and Cost Efficiency Performance

Correlations			Cost Efficiency performance	Reverse Logistics Innovation	Product Recovery	Re- manufacture
Cost performance	Efficiency	Pearson	1	.358**	.288**	.298**
		Correlation				
		Sig. (2-tailed)		.000	.000	.000
		N	344	344	344	344
Reverse Innovation	Logistics	Pearson	.358**	1	.032	.478**
		Correlation				
		Sig. (2-tailed)	.000		.557	.000
		N	344	344	344	344
Product Recovery		Pearson	.288**	.032	1	.027
		Correlation				
		Sig. (2-tailed)	.000	.557		.621
		N	344	344	344	344
Re-manufacture		Pearson	.298**	.478**	.027	1
		Correlation				
		Sig. (2-tailed)	.000	.000	.621	
		N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

A positive and significant correlation ($r=.358$, $p<.05$) was established between Reverse Logistics Innovations and cost efficiency performance, followed by the correlation between Re-manufacture and Cost Efficiency performance ($r=.298$, $p<.05$) and finally between Product Recovery and Cost Efficiency performance ($r=.288$, $p<.05$). This means that Cost

Efficiency performance was positively associated with Environmentally-Oriented Reverse Logistics Practices. From this analysis, it can be noted that the more there is improvement in Environmentally-Oriented Reverse Logistics Practices, the higher the Cost Efficiency performance among SDMFs.

Standard multiple regression model was carried out to establish the effect of Environmentally-Oriented Reverse Logistics practices on Cost Efficiency performance. This was modelled in the following form;

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_4 X_{42i} + \beta_4 X_{43i} + \varepsilon_i \dots \dots \dots (3.17)$$

The result on the summary model results on the effect of Environmentally-Oriented Reverse Logistics on Cost Efficiency performance are presented as shown in Table 4.39.

Table 4.39: Model Results on effect of Environmentally-Oriented Reverse Logistics on Cost Efficiency performance

Model	R	Adjusted R Square	Std. Error of Estimate	Change in R Square	F Change	df1	df2	Sig. Change	
1	.474 ^a	.225	.218	.56703	.225	32.838	3	340	.000
a. Predictors: (Constant), Re-manufacture, Product Recovery, Reverse Logistics Innovation									
Model	Unstandardized Coefficients			Standardized Coefficients			t	Sig.	
	B	Std. Error		Beta					
	(Constant)		1.387	.209			6.642	.000	
1	Reverse Logistics Innovation		.294	.059	.273		5.011	.000	
	Product Recovery		.241	.042	.276		5.766	.000	
	Re-manufacture		.126	.043	.160		2.943	.003	
a. Dependent Variable: Cost Efficiency performance									

a. Dependent Variable: Cost Efficiency performance

Source: (Field Survey Data, 2023)

From the result in Table 4.39, it emerged that Environmentally-Oriented Reverse Logistics practices explained only 22.5 % variance in Cost Efficiency performance. However, this variance although small, was significant, $F(3, 340) = 32.838, p < .05$. Results in Table 4.39 shows that the variable with the strongest contribution to the Cost Efficiency performance was Product Recovery, ($\beta = .276, p < .05$) followed by Reverse Logistics Innovations ($\beta = .273, p < .05$) and finally Re-manufacture ($\beta = .160, p < .05$). This means that a unit improvement in each of these variables improves Cost Efficiency.

4.6.2.3 Environmentally-Oriented Reverse Logistics on Market Share Performance

Market Share subscale of firm performance was correlated with each of the subscales of Environmentally-Oriented Reverse Logistics practices using Pearson product moment correlation. The findings are presented as shown in Table 4.40.

Table 4.40: Correlation between Environmentally-Oriented Reverse Logistics and Market Share performance

Correlations		Market Share	Reverse Logistics Innovation	Product Recovery	Re-manufacture
Market Share	Pearson Correlation	1	.373**	.309**	.327**
	Sig. (2-tailed)		.000	.000	.000
	N	344	344	344	344
Reverse Logistics Innovation	Pearson Correlation	.373**	1	.032	.478**
	Sig. (2-tailed)	.000		.557	.000
	N	344	344	344	344
Product Recovery	Pearson Correlation	.309**	.032	1	.027
	Sig. (2-tailed)	.000	.557		.621
	N	344	344	344	344
Re-manufacture	Pearson Correlation	.327**	.478**	.027	1
	Sig. (2-tailed)	.000	.000	.621	
	N	344	344	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

Source: (Field Survey Data, 2023)

The findings show that there were positive and significant correlations between the subscales of Environmentally-Oriented Reverse Logistics practices and Market Share. This is illustrated through the r coefficient values, first, the leading was the correlation between Reverse Logistics Innovation and Market Share ($r=.373$, $p<.05$) followed by Re-manufacture and Market Share ($r=.327$, $p<.05$) and finally Product Recovery and Market Share ($r=.309$, $p<.05$). This means that Market Share was positively associated with Environmentally-Oriented Reverse Logistics practices.

In addition, the effect of Environmentally-Oriented Reverse Logistics Practices on Market Share performance was determined by a standard multiple regression model. This was modelled in the following form;

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_4 X_{42i} + \beta_3 X_{43i} + \varepsilon_i \dots \dots \dots (3.18)$$

Findings of regression model results are presented as shown in table 4.41.

Table 4.41: Model Results on Effect of Environmentally-Oriented Reverse Logistics on Market Share performance

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change in the R Square	Change in F	df1	df2	Sig. Change	F
1	.505 ^a	.255	.248	.76647	.255	38.793	3	340	.000	
a. Predictors: (Constant), Re-manufacture, Product Recovery, Reverse Logistics Innovation										
Model				Unstandardized Coefficients		Standardized Coefficients		t	Sig.	
				B	Std. Error	Beta				
	(Constant)			-.109	.282			-.385	.700	
1	Reverse Logistics Innovation			.406	.079	.273		5.124	.000	
	Product Recovery			.356	.056	.296		6.313	.000	
	Re-manufacture			.204	.058	.189		3.537	.000	

a. Dependent Variable: Market Share

Source: (Field Survey Data, 2023)

The findings in Table 4.41 shows that Effect of Environmentally-Oriented Reverse Logistics practices on Market Share accounted for 25.5% variance in Market Share, which was also positive and significant, $F(3, 340) = 38.793, p < .05$. The findings show that all the subscales of Environmentally-Oriented Reverse Logistics practices on Market Share had a positive and significant effect on Market Share. The leading was Product Recovery ($\beta = .296, p < .05$) which had a positive and significant effect on Market Share followed by Reverse Logistics Innovation ($\beta = .273, p < .05$) which uniquely contributed to Market Share and finally Re-manufacture ($\beta = .189, p < .05$). This means that improving on Environmentally-Oriented Reverse Logistics practices on Market Share would automatically enhance expansion of SDMFs market to have a wider Market Share.

4.6.2.4 Environmentally-Oriented Reverse Logistics on performance of Soft Drinks Manufacturing Firms in Kenya

To establish effect of Environmentally-Oriented Reverse Logistics on overall firm performance, the mean subscales of performance was regressed against the three measures

of Environmentally-Oriented Reverse Logistics (Environmentally-Oriented Reverse Logistics Innovation, Product Recovery and Re-manufacture). This was modelled in the form as below;

$$Y_i = \beta_0 + \beta_4 X_{41i} + \beta_3 X_{42i} + \beta_4 X_{43i} + \varepsilon_i \dots \dots \dots (3.19)$$

The results are presented in Table 4.42.

Table 4.42: Model Results on Effect of Environmentally-Oriented Reverse Logistics on performance of Soft Drinks Manufacturing Firms in Kenya

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change in the R Square	Change in F	df1	df2	Sig. F Change
1	.655 ^a	.430	.423	.40457	.430	63.269	3	340	.000
a. Predictors: (Constant), mean Re-manufacture, mean Product Recovery, mean Reverse Logistics Innovation									
Model	Unstandardized Coefficients		Standardized Coefficients		T	Sig.			
	B	Std. Error	Beta						
	(Constant)	1.290	.160		8.059	.000			
1	EORL Innovation	.191	.047	.224	4.085	.000			
	Product Recovery	.333	.033	.490	10.229	.000			
	Re-manufacture	.158	.037	.235	4.299	.000			

a. Dependent Variable: Performance

Source: (Field Survey Data, 2023)

The results show that there is statistically significant relationship between Environmentally-Oriented Reverse Logistics and performance R (0.655). In addition, by square rooting the

value of multiple correlation coefficients, we infer that Environmentally-Oriented Reverse Logistics explains 43% of the performance. In addition, the results show that the proportion of variance in the performance explained by the Independent Variables (all three dimensions of Environmentally-Oriented Reverse Logistics) is 43.0% or $R^2=0.430$. This variation explained in the model is regarded as sufficiently large. The other variations in organizational performance of 57.0% were explained by other external factors outside this model.

The findings also show that all the three independent variables, which include: Environmentally-Oriented Reverse Logistics Innovations (EORL) ($\beta = 0.224$, $p < .05$); Product Recovery ($\beta = 0.490$, $p < .05$) and Re-manufacture ($\beta = .235$, $p < .05$) had positive significant effect on performance. The unstandardized β coefficient of Environmentally-Oriented Reverse Logistics shows that unit change in the level of Environmentally-Oriented Reverse Logistics causes 0.191 units increment in performance level and the change is significant as shown by the p-value while a unit change in Product Recovery and Re-manufacture causes 0.333 and 0.158 units increase in organizational performance levels of Soft Drinks Manufacturing Firms in Kenya. A summary Model on the regression of performance on the means was also presented.

4.6.2.5 Summary Model on the Effect of Environmentally-Oriented Reverse Logistics on firm performance

The fourth objective of the study sought to determine the effect of Environmentally-Oriented Reverse Logistics on performance of Soft Drinks Manufacturing Firms in Kenya, guided by the hypothesis: *H₀₄: Environmentally-Oriented Reverse Logistics has no significant effect on performance of Soft Drinks Manufacturing Firms in Kenya*. To test the hypothesis, an analysis was done using simple linear regression model by regressing mean of performance against mean of Environmentally-Oriented Reverse Logistics constructs (Environmentally-Oriented Reverse Logistics Innovations, Product Recovery, Re-manufacture). This was modelled in the following form;

$$Y_i = \beta_0 + \beta_4 X_{4i} + \varepsilon_i \dots \dots \dots (3.20)$$

The findings are presented as shown in Table 4.43.

Table 4.43: Summary Model on Effect of Environmentally-Oriented Reverse Logistics on Performance

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change in R Square	Change in F	df1	df2	Sig. Change	F
1	.626 ^a	.392	.389	.41610	.392	163.659	1	342	.000	
a. Predictors: (Constant), Mean Environmentally-Oriented Reverse Logistics										
b. Dependent Variable: Mean Performance										
Coefficients ^a										
Model		Unstandardized Coefficients			Standardized Coefficients		T		Sig.	
		B	Std. Error		Beta					
	(Constant)	1.369	.161				8.515		.000	
1	Environmentally-Oriented Reverse Logistics	.665	.052		.626		12.793		.000	
a. Dependent Variable: mean performance										

Source: (Field Survey Data, 2023)

The overall model summary indicates that Environmentally-Oriented Reverse Logistics accounted for 39.2% variance in performance, R Square=.392, which was significant and not by chance, F (1, 342) =163.659, p<.05. The findings also show that Environmentally-Oriented Reverse Logistics has a positive and significant effect on performance ($\beta=.626$, p<.05). This is a strongly significant effect indicating a strong magnitude of change in performance by 0.626 units as a result of a one-unit improvement in Environmentally-Oriented Reverse Logistics. Using unstandardized model coefficients, the results are illustrated and fitted in the model as shown;

$$Y=1.369+0.665X_{EORL}.....(4.20)$$

The equation shows that the constant term, is high, implying that even without including Environmentally-Oriented Reverse Logistics in the model, there would be a significant performance by 1.369 units. However, including Environmentally-Oriented Reverse Logistics improves performance by 0.665 units. Therefore, the regression results indicated that there was a statistically significant positive effect of Environmentally-Oriented Reverse

Logistics on performance of Soft Drinks Manufacturing Firms in Kenya. Therefore, the null hypothesis stated as H_{04} : Environmentally-Oriented Reverse Logistics has no effect on performance of Soft Drinks Manufacturing Firms in Kenya is rejected. It is thus concluded that there is a significantly positive effect of Environmentally-Oriented Reverse Logistics on performance of Soft Drinks Manufacturing Firms in Kenya.

The findings of current study that Environmentally-Oriented Reverse Logistics has a significant positive effect and accounts for considerable variance in performance ($R^2=.392$, $\beta=.626$, $p<.05$) agrees with results of previous other studies. Mandota (2015) in a Malawian case showed that Reverse Logistics has a significant positive impact on supply chain performance in Malawi manufacturing firms. Furthermore, the findings agree with results of Bor (2020), employing an explanatory research design in 187 food manufacturing firms and targeting the purchasing, production and safety and environmental departments proved that Reverse Logistics significantly and positively affect performance. In consonance with current establishments, Ebenezer & Zhuo (2019) from a Ghanaian perspective studied Impact of Reverse Logistics on performance of bottled and Sachet water manufacturing firms in Ghana. In accolade to this, this study showed that Reverse Logistics has a significant and positive influence on competitive advantage and organization performance. Yu, Tianshans & Ud Din (2018) reveals that that Reverse Logistics has a significant and positive relationship with performance (operation, financial and environmental). Mandota (2015) study also reveal that among the main challenges facing logistics operations are inability to identify hidden Reverse Logistics costs, complex nature of Reverse Logistics when in operations. The evidence put forward by the current study findings therefore nullifies the hypothesis Environmentally-Oriented Reverse Logistics has no effect on performance of Soft Drinks Manufacturing Firms in Kenya and adopts the alternative.

4.7 Moderating role of Stakeholder Pressure on the Relationship between Green Supply Chain Management Practices and Performance of Soft Drinks Manufacturing Firms in Kenya

In order to measure the extent to which SDMFs experience Stakeholder Pressure to practice GSCM practices, respondents were asked to rate these three elements, Regulatory pressure, Competitive pressure and Customer pressure on a five-point Likert scale ranging from Not at All at scale of 1.0 [2] Small Extent at a scale of 2.0 [3] Moderate Extent at a scale of 3.0 [4] Great Extent at a scale of 4.0 [5] Very Greater Extent at a scale of 5.0. The findings are presented in the subsequent sections.

Table 4.44: Descriptive statistics results on Stakeholder Pressure

Regulatory pressure	Frequency and percentage distribution of Responses				
	1	2	3	4	5
The Kenyan Government (the regulatory sector) has the power to enforce their environmental claims arising from our GSCM practices.	11(3.2)	8(2.3)	6(1.7)	318(92.4)	1(0.3)
The claims of the Kenyan Government (the regulatory sector) are viewed by our management team as legitimate.	10(2.9)	310(90.1)	5(1.5)	12(3.5)	7(2)
The claims of the Kenyan Government (the regulatory sector) are viewed by our management team as urgent.	12(3.5)	10(2.9)	297(86.3)	16(4.7)	9(2.6)
Management take timely and appropriate follow-up actions on communication received from regulators.	13(3.8)	11(3.2)	9(2.6)	254(73.8)	57(16.6)
There is improvement of relationship between our firm and regulators as a result of the pressure regulators extended on our firm.	18(4.7)	15(4.9)	245(71.2)	59(17.2)	7(2)
Customer pressure					
Customers have the power to enforce their environmental claims arising from our GSCM practices.	12(3.5)	5(1.5)	7(2)	37(10.8)	283(82.3)
The claims of competitors are viewed by our management team as legitimate.	8(2.3)	9(2.6)	9(2.6)	30(8.7)	288(83.7)
The claims of competitors are viewed by our management team as urgent.	13(3.8)	11(3.2)	7(2)	35(10.2)	278(80.8)
Management take timely and appropriate follow up actions on communication received from our firms' customers	8(2.3)	9(2.6)	29(8.4)	112(32.6)	186(54.1)

There is improvement of relationship between our firm and our customers as a result of the pressure our customers exerted on our firm	9(2.6)	26(7.6)	5(1.5)	107(31.1)	197(57.3)
Competitive pressure					
Competitors have the power to enforce their environmental claims arising from our GSCM practices.	16(4.7)	17(4.9)	7(2)	59(17.2)	245(71.2)
The claims of competitors are viewed by our management team as legitimate.	5(1.5)	7(2)	5(1.5)	66(19.2)	261(75.9)
The claims of competitors are viewed by our management team as urgent.	13(3.8)	11(3.2)	9(2.6)	57(16.6)	254(73.8)
Management take timely and appropriate follow up actions on communication received from our firms competitors	8(2.3)	5(1.5)	7(2)	122(35.5)	202(58.7)
There is improvement of relationship between our firm and our competitors as a result of the pressure our competitors exerted on our firm	65(18.9)	11(3.2)	74(21.5)	185(53.8)	9(2.6)

Source: (Field Survey, 2023)

From the findings presented in the Table 4.44 it is clear that The Kenyan Government (the regulatory sector) has the powers to enforce its environmental claims arising from GSCM practices to a Great Extent as reported by 318(92.4%) a majority of the respondents. It is also evident from the findings that the claims of the Kenyan Government (the regulatory sector) are viewed by our management team as legitimate to a Small Extent as reported by 310(90.1%) a majority of the respondent. This implies that management team of SDMFs to a Small Extent view claims by the regulatory sector as valid. It is also evident form the findings that the claims of the Kenyan Government (the regulatory sector) are viewed by our management team as urgent to a Moderate Extent as revealed by 297(86.3%) a majority of the respondents. Findings denote that management take timely and appropriate follow-up actions on communication received from regulators to a Great Extent as reported by 254(73.8%) a majority of the respondents. Finally, the findings denote that there is improvement of relationship between our firm and regulators as a result of the pressure regulators extended on our firm to a Moderate Extent as reported by 245(71.2%) a majority of the respondents. From the findings, it can be concluded that regulatory pressure moderates the relationship between GSCM practices and performance of SDMFs to a moderate extent. These finding conforms with the findings of Haleem et al. (2022) who alluded that firms comply with regulations within compliance for fears of reprisals due to environmental noncompliance and thus do not adopt “beyond compliance environmental practices”.

From the findings on Customer Pressure, a majority 283(82.3%) of the respondents reported that customers have the power to enforce their environmental claims arising from our GSCM practices to a Very Great Extent. 288(83.7%) a majority of the respondent reported that the claims of competitors are viewed by our management team as legitimate to a Very Great Extent. Majority, 278(80.8%) of the respondents reported that claims of competitors are viewed by our management team as urgent to a Very Great Extent. The descriptive statistics also denote that a majority 186(54.1%) of the respondents reported that management take timely and appropriate follow-up actions on communication received from our firm’s customers to a Very Great Extent. Finally, majority 197(57.3%) of the respondents reported that there is improvement of relationship between our firm and our customers as a result of

the pressure our customers put on our firm to a Very Great Extent. Thus, these findings conclude that customer pressure moderates the relationship between GSCM practices and performance to a Very Great Extent. These findings agree with Hazel & Mason (2020) findings and confirmed that customers demand organizations to go towards green practices to a Very Great Extent and now, organizations respond according to customers' requirements because they have realized if they do not satisfy customer's requirements, then their competitors get competitive advantage and get their customers.

The descriptive statistics on competitive pressure denote that competitors have the power to enforce their environmental claims arising from firms GSCM practices to a Very Great Extent as indicated by 245(71.2%) of the respondents. The findings also indicate that claims of competitors are viewed by firm's management team as legitimate to a Very Great Extent, which was revealed by majority, 261(75.9%) of the respondents. The findings show that the claims of competitors are viewed by firm's management team as urgent to a Very Great Extent, as revealed by 254(73.8%) of the respondents. A majority of the respondents 202(58.7) reported that management take timely and appropriate follow up actions on communication received from our firm's competitors to a Very Great Extent. Finally, majority 185(53.8) of the respondents indicated that to a Great Extent, there is improvement of relationship between our firm and our competitors as a result of the pressure our competitors exerted on our firm.

4.7.1 Summary model results on moderating role of Stakeholders Pressure on the Relationship between GSCM practices and Performance of SDMFs in Kenya

The fifth objective sought to ascertain the moderating effect of stakeholder pressure on the relationship between GSCM practices and performance of SDMFs in Kenya. The first variable entered in the model was GSCM practices, followed by the moderator variable, Stakeholders Pressure. Finally, the interaction term, which is the cross-product for the centered means for the predictor variable (GSCM practices) and the moderator variable, the centered means of Stakeholders Pressure were entered in the model. Moderated hierarchical multiple regression analysis model, with performance as the outcome variable, Stakeholder

Pressure as the moderator variable and Green Supply Chain Management as the predictor variable was employed. This was modelled as presented in equation 3.5.

$$Y_i = \beta_0 + \beta_1 X_{1i} + \varepsilon_i \dots \dots \dots (3.5)$$

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_m M_i + \varepsilon_i$$

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_m M_i + \beta_m M_i X_{1i} + \varepsilon_i$$

The findings are shown in Table 4.45.

Table 4.45: Moderating role of Stakeholders Pressure on GSCM practices and performance relationship

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Change in R Square	Change in F	df1	df2	Sig. Change	F
1	.773 ^a	.597	.596	.32454	.597	507.174	1	342	.000	
2	.794 ^b	.631	.629	.31102	.034	31.385	1	341	.000	
3	.827 ^c	.684	.682	.28813	.053	57.336	1	340	.000	
a. Predictors: (Constant), Green Supply Chain Management Practices										
b. Predictors: (Constant), Green Supply Chain Management Practices, Stakeholder Pressure										
c. Predictors: (Constant), Green Supply Chain Management Practices, Stakeholder Pressure, Interaction Term										
Model	Unstandardized Coefficients		Standardized Coefficients		t		Sig.			
	B	Std. Error	Beta							
1	(Constant)	1.496	.085		17.498	.000				
	Green Supply Chain Management Practices	.605	.027	.773	22.521	.000				
2	(Constant)	1.316	.088		14.957	.000				
	Green Supply Chain Management Practices	.496	.032	.634	15.368	.000				
	Stakeholder Pressure	.171	.031	.231	5.602	.000				
3	(Constant)	1.027	.090		11.407	.000				
	Green Supply Chain Management Practices	.416	.032	.532	13.124	.000				
	Stakeholder Pressure	.126	.029	.170	4.348	.000				
	Interaction Term	.207	.027	.274	7.572	.000				

a. Dependent Variable: mean performance

Source: (Field Survey, 2023)

The findings on the moderation analysis are presented in Table 4.45. From the results above, the overall model was significant, $R = .773$, $F(3, 340) = 57.336$, $p < .05$. In the first step, a regression was carried out between GSCM practices and performance, GSCM practices accounted for 59.7% a significant amount of variance in performance as shown by ($R^2 =$

.597, $p < .05$) with statistics $F(1, 342) = 507.174$. In the second step, Stakeholder Pressure was added in the model and it accounted for 3.4% variance in performance ($R^2 = .034$, $p < .05$), $F(2, 341) = 31.385$, $p < .05$. The total variance accounted for by both Green Supply Chain Management practices and Stakeholder Pressure was 63.1%. Finally, the interaction term was added to the model and was found to account for 5.3% variance in firm performance, ($R^2 = .053$, $p < .05$), $F(3, 340) = 57.336$, $p < .05$. This implies Stakeholder Pressure had a significant positive moderating effect on the relationship between GSCM practices and performance. In practice, results of the interaction term in the model ($R^2 = .053$, $p < .05$) show that Stakeholder Pressure improves the effect of GSCM practices on performance of SDMFs by 0.053 units.

Further findings on moderating effect of Stakeholder Pressure on the relationship between GSCM practices and performance are presented using model coefficient results. The findings in the table above shows that GSCM practices has a significant positive effect on performance of SDMFs ($\beta = .773$, $p < .05$). When Stakeholder Pressure was introduced in the model, the findings show that the magnitude effect of Stakeholder Pressure on performance was significant and positive ($\beta = .231$, $p < .05$), although that of GSCM practices reduced ($\beta = .634$, $p < .05$) but remained significant. Interaction term was introduced in the model and was found to have a significant positive effect on performance ($\beta = .274$, $p < .05$), although the effect of GSCM practices ($\beta = .532$, $p < .05$) and that of Stakeholder Pressure ($\beta = .170$, $p < .05$) further reduced though remaining significant. It can thus be deduced that Stakeholder Pressure significantly and positively moderates the relationship between GSCM practices and performance of SDMFs in Kenya. In practice, these results show that unit increase in Stakeholder Pressure improves the effect of GSCM practices on performance of SDMFs by 0.274 units. The t statistics ($t = 7.572$) show that the variance in performance attuned by Stakeholder Pressure is significantly higher than the variance caused by standard error in the model.

The results of the study ($R^2 = .053$, $\beta = .274$, $p < .05$) show that Stakeholder Pressure has a significant moderating effect on the relationship between GSCM practices and performance and accounts for 5.3% variance on the effect of GSCM practices on performance of SDMFs in Kenya. In practice, if there was a unit increase in Stakeholder Pressure, the effect of

GSCM practices on performance would increase by 0.274 units. The results are inferred in model 4.6;

$$Y_i = 1.496 + 0.605X_{GSCMP} \dots \dots \dots (4.6)$$

$$Y_i = 1.316 + 0.496X_{GSM} + 0.171M_{SP}$$

$$Y_i = 1.027 + 0.416X_{GSM} + 0.126M_{SP} + 0.207M_{SP}X_{GSCMP}$$

The findings of the study agree with establishments of the Natural Resource Based View (NRBV) theory as opined by Hart (1995). Stakeholders are an important resource to firm's performance given that their pressure unequivocally improves the effect of adopting GSCM practices. In this regard, both GSCM practices and stakeholders are frugal resources that may be leveraged by a firm to alleviate environmental outcomes. The NRBV theory expounds that firms may utilize their available resources (in this case GSCM practices and stakeholders) to improve their outcomes. The motive behind GSCM is to improve supply chain competitiveness while considering the availability and cost of external environmental resources in order to create value for firms through enhanced Cost Efficiency, Profitability and Market Share which agrees with the current study.

The findings of the study that stakeholder pressure moderates the relationship between GSCM practices and performance, agrees with findings of other previous scholars. Extensive empirical literature has been generated in support of the important role played by stakeholders, both individually and collectively in driving GSCM efforts within companies (e.g. Boaventura et al., 2020; Haleem et al., 2022; Hazel & Mason, 2020; Ombati, 2018; Qian & Chen, 2020 and Saleem et al., 2020). Graham (2020) for instance, showed that internal and external stakeholder pressure in the food industry is important precursors in the implementation of environmental supply chain practices. Findings indicated that stakeholder pressure has a significant positive effect on implementation of environmental supply chain practices. Stakeholders such as the government and consumer's demand for environmentally sound practices are frugal in implementation of supply chain practices. In the same vein, results of the current study contrasts with results of previous empirical evidence. In discussions on the moderating effect of stakeholder pressure on corporate social responsibility and firm performance, Haleem et al. (2015) advised managers of manufacturing firms in developed and developing countries to consider abetting pressures

arousing from stakeholders as these dented social responsibilities of their firms to the society. When stakeholders exert pressure, more so environmental and social pressures, firms implementing social practices will be more adamant and in turn concentrate on other objectives since pressures imply likening their budgets as mandatory to societal activities. Haleem et al. (2015) showed that stakeholder pressure did not moderate corporate social responsibility and firm performance among manufacturing firms.

Stakeholder theory emerged in response to the growing dynamism and complexity of the environment in which organizations operate (Langrafe et al., 2020). In this approach, all the individuals or groups that have a stake in the organization are considered in the strategic management and the organization is managed with the purpose of creating value for owners, employees, customers, suppliers and local communities at large (Freeman et al., 2020). Pressure from various stakeholder groups is a vital motivation for the implementation of various environmental strategies and practices (Saleem et al, 2020).

Extensive empirical literature has been generated in support of the important role played by stakeholders, both individually and collectively in driving GSCM efforts within companies (e.g. Boaventura et al., 2020; Haleem et al., 2022; Hazel & Mason, 2020; Ombati, 2018; Qian & Chen, 2020 and Saleem et al., 2020). All these studies and reviews demonstrate the positive influence the Stakeholders pressure has on the firms. Therefore, there is enough evidence to debunk the hypothesis that Stakeholder Pressure has no moderating effect on the relationship between Green Supply Chain Management practices and performance of Soft Drinks Manufacturing Firms and likewise, adopt the alternate.

The study therefore, indicates that firms need to have a continual focus in practicing green supply chain management practices under a pressured environment, where the interests of key stakeholders such as regulators, customer and competitors are considered as this will improve performance in the long run.

4.9 Qualitative Data Analysis

4.9.1 Response Rate

To increase the response rate, all the 92 CEOs were invited to take part in the interview through an invitation letter. Only 48(52%) CEOs responded to the invitation letter and confirmed their availability to take part in the interview. Participants' interview begun immediately after completion of quantitative data collection and concluded when data saturation occurred. A total of 20 CEOs had been interviewed at that point in time. The interview sessions varied in length, but on average, each interview session lasted 45 minutes. Ethical requirement to preserve the anonymity of the Participants was followed hence, each respondent was assigned pseudonyms and for the remainder of this study will be referred to as participant 1 to 20 (P1-P20).

4.9.2 Profile of the Qualitative Participants

The researcher sought to establish the background information of the participants who took part in the qualitative study. This section provides a summary of the characteristics. This is because the respondents (senior managers) in the quantitative study are different from the participants (CEOs) in the qualitative. Participants were asked of the positions they hold in their firms. This was to confirm that the participants selected met the sample collection criteria for the study, as well as triangulate the evidence obtained through quantitative analysis. All the participants were Chief Executive Officers of their respective Soft Drinks Manufacturing Firms. This is in line with Mantgomery (2017)'s argument that the key Participants should be individuals with detailed knowledge of what is being studied and should be willing to communicate this information. In addition, the perceptions of individuals in top management echo the collective perspective of the firm and therefore their responses to subjective questions on firm level data are likely to be highly reliable (Mantgomery, 2017). In particular, CEOs must fulfill a vital aspect of their fiduciary duty by ensuring that a company's negative externalities do not degrade the environment or contribute to global warming according to Alshaer et al. (2023).

The study also analyzed the tenure of the CEOs in the SDMFs and found out that 75% of the participants had served for less than five years in that position. Tenure of service was found to contribute to performance as a result of GSCM practices implementation. From the agency costs perspective, longer tenure may reflect well established managers who are more likely

to focus on maximizing their own interests by promoting executives who share similar ideas (Tan and Liu, 2016). Based on the career concern hypothesis of CSR, newly appointed CEOs are more likely to mitigate career concerns in the early years of their service by engaging more in social and environmental initiatives that create long-term sustainable value for their stakeholders (Chen et al. 2019). CEOs not only need to undertake more investment early in their tenures to gain benefits at a later stage of their careers, but they also have a strong need to demonstrate their competence at the outset of their appointments by addressing environmental issues, thereby reducing the need to do so later in their tenures (Chen et al. 2019).

Participants were asked of their firms' age. From the analysis, the Participants' firms were in different age brackets though 60% of the Participants' firms were over 20 years. Firms with more years in business gain competitive advantage over young firms in terms of experience in GSCM and financial performance improvements thus are better placed to implement GSCM practices. For example, Younis and Sundarakani (2019) used firm size, firm age and environmental management certification as control variables to examine the relationship between Green Supply Chain practices and corporate performance. Younis and Sundarakani (2019) findings confirmed that firms with more years in business are early adopters of GSCM practices thus have lower environmental risks and better economic performance compared with late adopters or very young firms in business.

When responding to the question on the CEOs' focus, 70% of the participants pointed out that whereas once senior managers focused on profits and shareholders' returns, now they must recognize their social responsibilities towards all stakeholders, both internal and external, by establishing quantifiable goals for GHG emissions, minimizing their companies' carbon footprints, and reducing water and paper consumption. SDMFs CEOs were under growing pressure from regulators, investors, environmental groups, and other stakeholders to institute environmental reforms that will make a positive contribution to countering the dystopian consequences of climate change.

When participants were asked of their understanding of GSCM practices, it was interesting to witness that all the 20 Participants testified of applying GSCM practices in their own

SDMFs. Generally speaking, a satisfactory level of knowledge regarding GSCM practices was found and these practices have turned into a welcomed proposition by SDMFs. This was confirmed by the CEOs' own point of view; who affirmed that they have implemented the four main GSCM practices mentioned in the literature review. One hundred percent of CEOs' mentioned all the four GSCM practices when explaining the GSCM practices that their firms have implemented. Two CEOs' notably captured the essence of what the participants shared when asked of their understanding of GSCM practices. In view of that, P6 stated:

"The eccentric nature of the Soft Drinks supply chain implies that our firm has implemented conventional GSCM practices and is very effective in improving our firm's performance".
(P6)

On the same note P18 and P1 stated that:

"In our firm, matters of GSCM are consolidated via supplier evaluation based on our environmental performance, developing ecologically sound products as well as packaging, taking the edge off carbon emissions related with product distribution and eco-Reverse Logistics management". (P18)

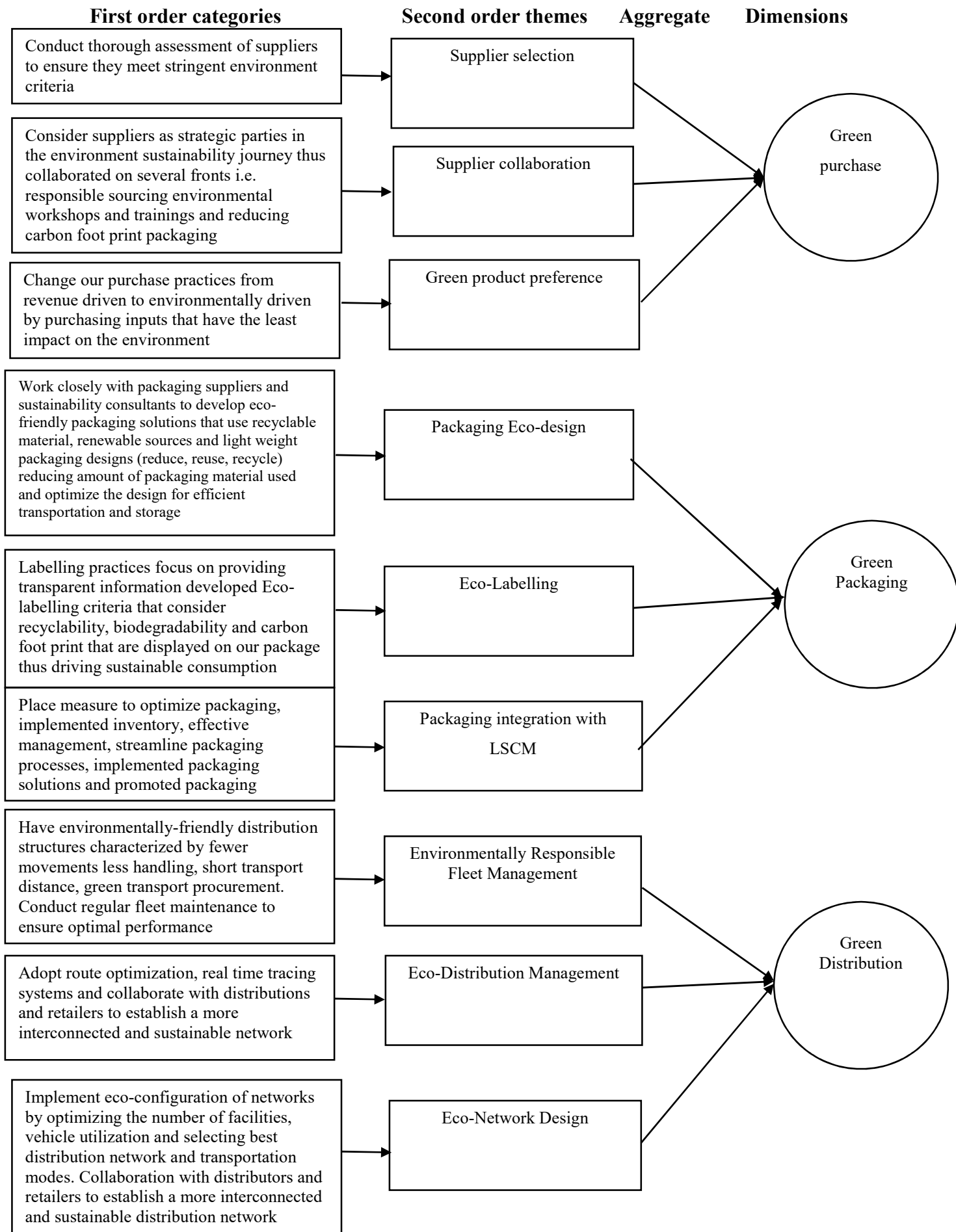
"Our commitment to GSCM practices implementation comes from our top management who promote all policies and activities carried out here. But, being a multi-national company, all this comes to us from the headquarters, where GSCM practices have been implemented for many years". (P1)

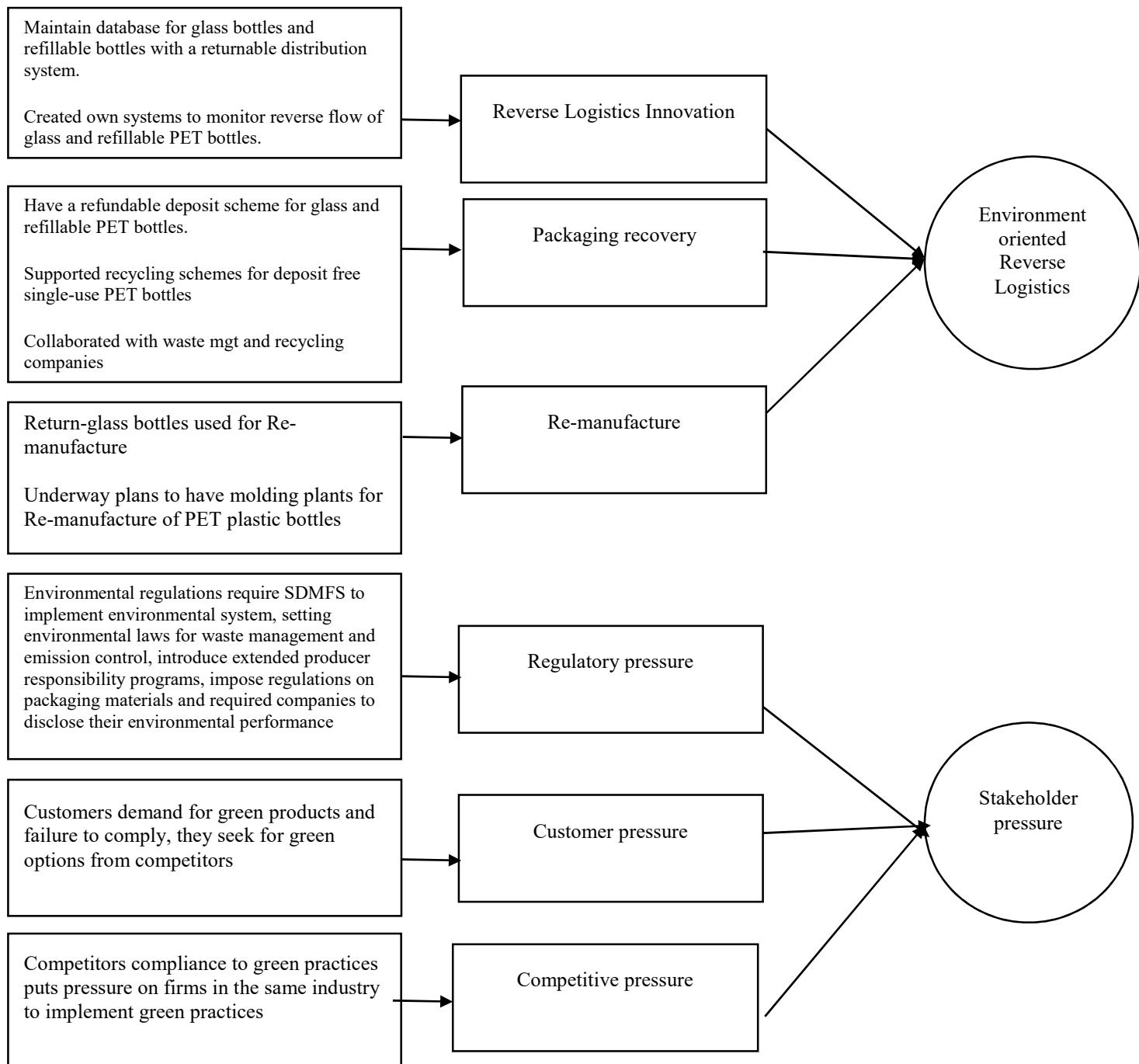
These findings confirmed Al-Shaer et al. (2023) findings who stated that CEOs must fulfill a vital aspect of their fiduciary duty by ensuring that a company's negative externalities do not degrade the environment or contribute to global warming.

4.10 Green Supply Chain Management practices and performance

The Green Supply Chain Management practices and performance model in Figure 4.1 unpacks how Green Procurement, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics affects performance of Soft Drinks Manufacturing Firms. The data structure in figure 4 was generated from the NVivo 10

software. It is divided into first-order categories (raw data themes), second order themes (higher order themes) and aggregate dimensions. First order categories (or in-vivo codes) were derived from the individual interview transcripts. The second order code/themes were analytically generated through looking for patterns and explanations in the codes from the twenty different transcripts. Finally, based on all the second order themes generated, a third order category (aggregate dimensions) is developed. During this process, the effect of Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics practices were generated from the data as explained in Figure 4.





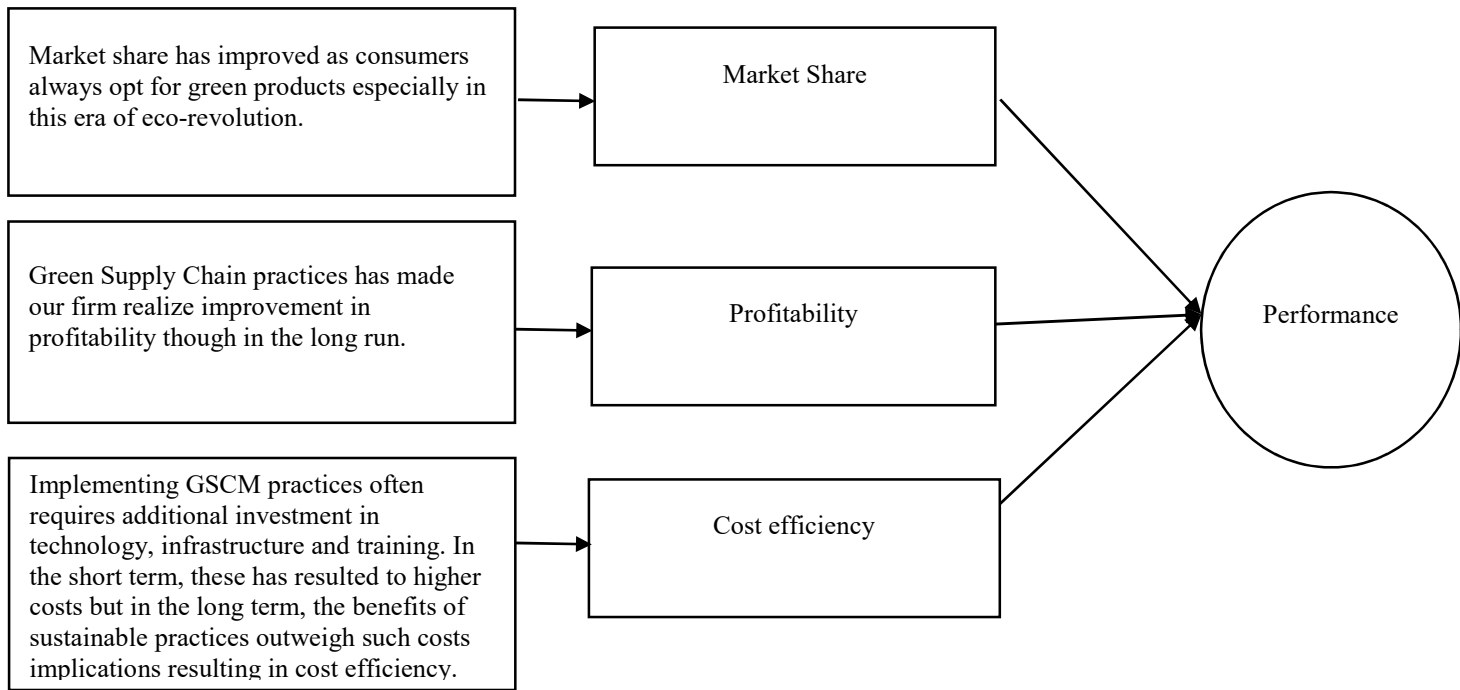


Figure 4.1: First order categories Second order theme Aggregate

4.10.1 Green Purchasing and Performance

The first objective of the study was to establish the effect of Green Purchasing on performance of SDMFs. To do this, Green Purchasing practices generated from the data structure in figure 4 was used to explain the effect of these Green Purchasing Practices on performance of SDMFs as explained below. This analysis suggests that SDMFs implemented Supplier Selection, Supplier Collaboration and Green Product Preference as the Green Purchasing practices.

When responding to the question on how your firm has implemented green Supplier Selection, all the participants expressed the same view that they considered Supplier Selection as paramount as it takes place at the beginning of their supply chain. When selecting suppliers, participants confirmed that their firms have clear rules for selecting the suppliers that consider the product lifecycle. Specifically, participants agreed that however much multi-dimensional factors are considered when they are purchasing products and services, SDMFs developed a robust evaluation process to assess potential suppliers based

on their environmental performance and sustainability practices. They prioritize suppliers who demonstrate a commitment to environmental stewardship, such as having eco-certifications, adhering to responsible sourcing practices, and implementing waste management initiatives. By partnering with environmentally conscious suppliers, they ensured that their entire supply chain aligned with their sustainability goals and minimized the environmental impact of their operations. Thus, SDMFs minimize environmental impact by influencing their supply market practices as noted by P7 and P11:

"Supplier Selection is integral to our GSCM approach. We conduct thorough assessments of our suppliers to ensure they meet our stringent environmental criteria. Additionally, we consider their track record in ethical sourcing. By choosing suppliers with strong green credentials, we create a network of like-minded partners who share our commitment to sustainability and help us achieve our environmental objectives." (P7)

"We prioritize suppliers who demonstrate a commitment to environmental stewardship through their product life cycle. By partnering with environmentally conscious suppliers, we ensure that our entire supply chain aligns with our sustainability goals and minimizes the environmental impact of our". (P11)

SDMFs collaborated with suppliers on green aspects on several fronts as a corner stone of their GSCM practices. SDMFs engaged in open communication and knowledge-sharing with their suppliers and encouraged their suppliers to adopt sustainable practices. Together with their suppliers, SDMFs explored opportunities for energy efficiency, waste reduction, and responsible sourcing. Their collaborative approach not only improved their environmental and business performance but also promoted a culture of sustainability throughout their supply chain. P14 mentioned that the major concern of SDMFs at that time was plastic pollution thus they collaborated with suppliers of plastic packaging materials to ensure that the packaging material is more recyclable and at the same time provide plastic-free alternatives. P4 and P15 sentiments provided a summary of participants' views.

"We consider our suppliers as strategic partners in our sustainability journey. We collaborate on various fronts, from responsible sourcing of raw materials to reducing the carbon footprint in our distribution network. We involve suppliers in our sustainability

workshops and training programs. This approach fosters a shared commitment to sustainability, thus create a sustainable ecosystem that benefits both our business and the environment". (P4)

"Our product portfolio increases day by day as we enter new markets. This calls for diverse packaging alternatives thus pushed our firm to collaborate with packaging materials suppliers. We are completely rethinking our approach to packaging to use less, better or no plastic. This calls for close collaboration with our packaging suppliers". (P15)

SDMFs attested that Green Product Preference contributed to their green supply initiatives. Air pollution, plastic in oceans, global warming, and food waste all are among the major threats, that made them worry and think of being kinder to the planet. In support of environmental health, SDMFs purchased environmentally responsible products despite their higher cost. One participant specifically pointed out that their brands illustrated how their firm changed their mission and practices from revenue-driven to environmentally aware by purchasing inputs that have the least impact on the environment as possible. Gripping the trend, some SDMFs turned to a marketing strategy that helped to hook such consumers in addressing their social responsibility and in turn influencing their purchasing decisions hence laid more emphasis on green inputs. P20 specifically noted that:

"We've done a lot of consumer research, and we know that if we put two products side-by-side – one from our brand and one from competitors – and if they're comparable in price and quality, the majority of the time, a customer will choose our product since it's made with 'green' elements. We place regard to green preference when purchasing our inputs". (P20)

From the Participants' submissions, it is evident that the purchasing area is the leader for GSCM practices initiative in SDMFs and that the SDMFs implemented Green Purchasing practices as identified by Anane (2020) (Supplier Selection, Supplier Collaboration and Green Product Preference). When responding to the question on contribution of Green Purchasing to SDMF's business performance, all participants alluded that taking Green Purchasing into consideration ultimately increased their firm's financial performance by reducing product cost, improving sales and enhancing returns on investment. From the

analysis findings, it was evident that that Green Purchasing affects firms' performance positively. These findings echo the findings of Aleri & Monari (2018), Gosh (2018), Bor et al., (2019) Anane (2020) studies that depicted a strong and positive correlation between Green Purchasing and performance and thus the current study concludes that in the event that Green Purchasing is practices, performance is bound to be realized.

4.10.2 Green Packaging and Performance

The second objective of the study was to establish the effect of Green Packaging on performance of SDMFs. To do this, Green Packaging practices generated from the data structure in figure 4 was used to explain the effect of these Green Packaging Practices on performance of SDMFs as explained below. Looking at the planet element, SDMFs focused on Green Packaging. Some participants were not shy to reveal that SDMFs have been labelled as key offenders in the war on plastic and perpetuation of seemingly unsustainable packaging. This analysis suggests that SDMFs implemented Eco-Design, Eco-Labeling and Packaging Integration with Logistics and Supply Chain Management with Logistics and Supply Chain Management as the Green Packaging practices.

To answer the first question on how SDMFs embraces Packaging Eco-Design, majority of participants talked of their ambitious strategies to drive a circular economy for their packaging to support a debris-free environment through Eco-Design. P3 and P11 summarized what most participants had to say:

"Our team works closely with packaging experts and sustainability consultants to develop eco-friendly packaging solutions that focus on using recyclable materials, reducing the amount of packaging material used, and optimizing the design for efficient transportation and storage. By implementing Eco-Design practices, we aim to minimize waste, conserve resources, and reduce our carbon footprint." (P3)

"We have moved away from colored PET bottles to clear PET bottles that are highly recyclable". (P11)

When responding to the question on how has your firm developed eco-labels that considers the firm's products' lifecycle and environmental product impact, this analysis suggests that SDMFs took steps to implement eco-labeling throughout their product portfolio. Firstly, they conducted thorough assessments of their products and packaging materials to identify their environmental impact. Based on these assessments, SDMFs developed eco-labeling criteria that considered factors such as recyclability, biodegradability, and carbon footprint. SDMFs' products that meet these criteria were labeled with prominent eco-labels, allowing consumers to make informed choices. Secondly, SDMFs collaborated with recognized eco-labeling organizations to ensure the credibility and legitimacy of their labeling efforts. They regularly engaged in third-party audits to verify compliance and uphold transparency. All the Participants attested that they used Type II Eco-Labels which are self-declared environmental claims made by manufacturers without independent third-party certification. The eco-labels included Eco-Label Kenya, Forest Stewardship Council Certification, and Recycling symbol, Carbon Footprint Labels, Fair Trade Certification and Green Dot Symbol. This finding is summarized by P3 and P4 who said:

“Our approach to eco-labeling involves a comprehensive assessment of our products' life cycle. We have established rigorous criteria based on sustainability standards and best practices and products that meet these criteria are awarded with prominent eco-labels. We are proud to showcase these labels on our packaging, providing consumers with clear information on the environmental impact of our products. Our eco-labeling efforts reflect our ongoing dedication to reducing our environmental footprint and fostering a greener future”. (P3)

“A big percentage of our consumers are millennials and generation Z (13-32 years) whose major trait is commitment to eco-consumerism and practice environmental conscious shopping through eco-labels. The recycling symbols on our packaging drives sustainable consumption by attracting environmental conscious consumers hence expand our Market Share”. (P4)

Participants explained how they recognized the importance of integration of packaging with Logistics and Supply Chain Management as a key aspect of their green supply chain strategy.

SDMFs implemented several initiatives to optimize packaging and reduce waste throughout their operations. Firstly, SDMFs redesigned their packaging to be more lightweight and used environmentally friendly materials. This not only reduced their carbon footprint but also lowered transportation costs and improved logistics efficiency. Secondly, SDMFs implemented robust packaging management systems that allowed them to track and monitor packaging materials throughout the supply chain. This enabled them to optimize inventory levels, minimize packaging waste, and facilitate recycling or reuse. Lastly, SDMFs collaborated closely with logistics partners to streamline packaging processes and implement innovative solutions, such as returnable packaging systems. By integrating packaging with logistics and supply chain management, SDMFs were able to achieve significant environmental benefits while enhancing operational efficiency.

“Firstly, we have adopted a holistic approach to packaging design, considering factors such as material sourcing, packaging size, and recyclability leading to reduce packaging waste and lower our environmental footprint. Secondly, we have implemented effective inventory management systems to ensure optimal packaging levels and minimize excess inventory. Furthermore, we actively collaborate with our logistics partners to streamline packaging processes, implement returnable packaging solutions, and promote packaging reuse or recycling. By integrating packaging with logistics and supply chain management, we have not only reduced costs but also made significant strides in minimizing our environmental impact”. (P7)

“Our beverages go through a destination journey that involves manufacturers, distributors, retailers and ultimately consumers, we have thus ensured efficient unit loads in handling, storage and transportation of our Soft Drinks in the entire supply chain”. (P18)

Based on participants' responses, however much the war on plastic pollution and perpetuation of seemingly unsustainable packaging is still on, SDMFs have benefited from Green Packaging. Participants confirmed that they benefitted from cost reduction by using light weight PET bottles that offered better utilization of space, less loading time, less raw material usage, waste management, speedier deliveries that add up to savings and a reduction in emission. By minimizing costs in terms of reduced packaging material expenses and

maximizing resource utilization, SDMFs improved Cost Efficiency and profitability. Eco-friendly packaging attracted environmentally conscious consumers hence expanding Market Share of SDMFs. This finding resonates with those of Maziriri (2020) and Gikonyo, Ngugi & Nyang'au (2022). In regards to GSCM literature (Nyariaro, 2017; Demartini et al., 2018; Lodorfos et al., 2018 and Bor, 2021) a common suggestion is that SDMFs should consider implementing more innovative versions of Green Packaging which bring the benefits to the company business itself making participants' responses a valid parameter to be used by SDMFs.

4.10.3 Green Distribution and performance

The third objective of the study was to establish the effect of Green Distribution on performance of SDMFs. To do this, Green Distribution practices generated from the data structure in figure 4 was used to explain the roles of these Green Distribution Practices on performance of SDMFs as explained below. From the participants' responses, it was discovered that the model adopted by the SDMFs for distribution of products was twofold: handling the outbound logistics of the Soft Drinks bottles was totally carried out by the SDMF or outsourced to distributing agents or distributors to cover all areas of the country. However, this was not an issue since the SDMFs that outsourced distribution had a database on their suppliers' Green Distribution practices and confirmed that they could provide full information on the same on behalf of the outsourced suppliers. This analysis suggests that SDMFs implemented Environmentally Responsible Fleet Management, Eco-Distribution Management and Eco-Network Design as the Green Distribution practices.

SDMFs made significant investments in their fleet to minimize environmental impact. They implemented fuel efficiency programs, including invested in a modern fleet of fuel-efficient vehicles through green transport procurement, driver training on eco-driving techniques and regular maintenance to optimize vehicle performance. They went a step further and implemented advanced route planning by having more direct shipping routes and optimization systems to minimize mileage (shorter transport distance) and reduce fuel consumption. SDMFs also invested in modern fleet equipped with advanced technologies that minimized emissions and improved fuel efficiency. Participants confirmed that they conducted regular fleet maintenance to ensure optimal performance and reduced the risk of

pollutants. Additionally, SDMFs implemented route optimization and load consolidation techniques to minimize mileage, handling and movement as well as maximize vehicle utilization. Furthermore, they actively monitored and analyzed their fleet data to identify opportunities for further improvement. Their commitment to environmentally responsible fleet management not only reduced their carbon footprint but also led to cost savings through improved fuel efficiency and enhanced their brand reputation as an environmentally conscious company. P20 and P5 discussed how Green Procurement and Green Packaging of their firms enabled them to practice Environmentally Responsible Fleet Management.

“Through Green Transport Procurement, our firm purchased fuel efficient vehicles that improved our fuel economy by 30%, reduced GHGs emissions by 20% and cut particulate pollution by 70%. We also track the cost of fuel using fuel cards to save on expenditures and consumption and in turn lessen carbon impact.” (P20)

“Our Green Packages have facilitated consolidation of freight and by this, we have cut costs tremendously.” (P5)

The analysis suggests that SDMFs embraced Eco-Distribution Management on several fronts. They opted for automating route optimization to increase vehicle efficiency, batching goods together for higher drop density and performing hyper social deliveries for nearby stores. They optimized their delivery routes using advanced logistics software, thus reducing mileage and emissions. SDMFs collaborated with their retail partners to implement shared distribution centers. Through these collaborations, SDMFs implemented load consolidation (for higher drop density and minimized the number of trucks on the road), backhauling, and efficient routing practices to maximize truck utilization and minimize empty miles. They also adopted packaging optimization techniques to reduce the volume and weight of their products, leading to lower transportation costs and reduced carbon emissions. This study's findings show that Eco-Distribution Management is increasingly important as businesses scale up their last mile logistics operations to cope with growing demand. This interpretation is confirmed by two participants:

“It’s a quick win for our firm as grouping together goods going out to the same area in the same time window enables our firm to cut costs by reducing the number of vehicles and drivers dispatched and maximize their energy efficiency”. (P5)

“Hyper social fulfillment has made us to cut costs eliminating large shipping fees and distribution center costs”. (P13)

Participants established that they have been directly involved in determining the eco-configuration of networks since these decisions are taken at the strategic level as huge investments are usually requisite to make these decisions and they have long term effects on performance of their firms. Specifically, SDMFs determined the eco-configuration of networks by optimizing the number of facilities, vehicle utilization and selecting the best distribution network as well as transportation modes. By adopting advanced logistics technologies, such as route optimization and real-time tracking systems, they have been able to streamline transportation and reduce fuel consumption. SDMFs implemented consolidation centers to minimize the number of delivery trucks on the road and maximize their utilization. Additionally, SDMFs collaborated with distributors and retailers, to establish a more interconnected and sustainable distribution network. This allowed SDMFs to achieve significant reductions in costs and greenhouse gas emissions, improve delivery reliability, and enhance overall supply chain efficiency:

“With more careful route planning and collaboration with distributors and retailers, our firm has established a more interconnected and sustainable network thus stuck at a very tight and dependable schedule, hence we have developed great credibility with our customers while at the same time increased our Market Share and achieved the lowest possible cost to serve our network”. (P12)

“We have laid out routing systems that reduce the travel distance, idle travels, circuitous travels and repetitive travels. This has resulted in reduced GHG emissions, reduced fuel consumption and increased Cost Efficiency.” (P17)

The discussions of this finding indicate that Green Distribution has a positive effect on performance of SDMFs. Participants noted that Green Distribution resulted in Cost Efficiency due to efficient fuel consumption arising from interconnected and sustainable networks, delivery vehicle utilization, route scheduling, as well as congestion abatement, and the reduction of air and noise pollution when the vehicle is efficiently loaded. This finding echoes the works of Lu et al., (2019) and Yusuf (2020) that Green Distribution can result in efficient fuel consumption arising from delivery vehicle usage, loading, and route scheduling, as well as congestion abatement, and the reduction of air and noise pollution when the vehicle is efficiently loaded. In addition, it can eliminate less-than-truck-load (LTL) incidences and improve vehicle usage in terms of optimizing available space utilization. According to Kirunga & Kihara (2019), Green Distribution has a strong and positive correlation with performance (profitability, Cost Efficiency and Market Share) as it improves market penetration, customer service and on time delivery for each drop-off point. It also expands delivery zones, generates additional delivery routes and reduces travel time. Green Distribution further improves vehicle utilization, provides more cost-efficient full load deliveries, reduces fuel consumption and improves delivery flexibility. Thus, this study contributes to Green Distribution research and indicates that Green Distribution leads to improved performance of SDMFs in Kenya.

4.10.4 Environmentally-Oriented Reverse Logistics and performance

The fourth objective of the study was to establish the effect of Environmentally-Oriented Reverse Logistics on performance of SDMFs. To do this, Environmentally-Oriented Reverse Logistics practices generated from the data structure in figure 4 was used to explain the effect of Environmentally-Oriented Reverse Logistics practices on performance of SDMFs as explained below. Participants confirmed that packaging gave them the most headaches when it comes to Reverse Logistics as compared to other causes of return due to the negative impact that Soft Drinks packaging had on the environment. At this point, the questions took a turn and the researcher concentrated on Environmentally Reversed Reverse Logistics of Soft Drinks packaging. Participants discussed the types of Soft Drinks packaging and from the discussions, there were four types of packaging (recyclable glass bottles, Soft Drinks cartons, aluminum cans and polyethylene terephthalate (PET) plastic bottles) that either had

a returnable or a non-returnable distribution system. Some participants were not shy to reveal that SDMFs have been labelled as key offenders in the war on plastic and perpetuation of seemingly unsustainable packaging. This analysis suggests that SDMFs implemented Eco-Design, Eco-Labeling and Packaging Integration with Logistics and Supply Chain Management with Logistics and Supply Chain Management as the Green Packaging practices.

In response to the question on what innovations have SDMFs implemented in Reverse Logistics of packaging materials, participants explained basing on five strategic aspects of Reverse Logistics Innovation as identified by Burawat & Kuntunbutr (2019) i.e. formalization (maintain database), customization (creates own system to monitor reverse flow of materials), flexibility (has its own way of handling returns), information-related ability (developed Information System ability to handle returns) and functional integration (created a connected marketing operations interface to handle returns). When it comes to formalization and information-related ability, participants confirmed that for the case of refillable Soft Drinks (mineral water) PET packaging and glass bottle packaging, the SDMFs maintained long-term databases regarding the number of bottles given to the distributors and retailers and number of bottles distributors and retailers return to them since a deposit settling method was adopted. For the case of Soft Drinks cartons, aluminum cans and polyethylene terephthalate (PET) plastic bottles, neither the SDMFs nor the distributors maintained long-term databases regarding the number of packaging in the reverse channel since they had a non-returnable distribution system. This led to uncertainty about returns thus failed to achieve the formalization and information-related ability strategic aspects of Reverse Logistics Innovation. Participants also confirmed that they created their own systems to monitor reverse flow of refillable Soft Drinks (mineral water) PET packaging and glass bottles due to the financial incentive to return them. Participants explained that Reverse Logistics for single-use PET Soft Drinks packaging recovery relied mainly on informal sector (scavengers, waste pickers, garbage pickers or cart pushers) that picked the bottles from the streets and also scavenged at illegal dumpsites and landfills and sold these to unregulated plastic collectors who in turn sold to recyclers.

The second question was what strategies have SDMFs put in place to ensure packaging materials are recovered after use. P3 highlighted how glass bottles and refillable Soft Drinks (mineral water) PET packaging were highly recovered and caused significantly less packaging waste than single-use PET Soft Drinks packaging with return rate of almost 100% as consumers had sufficient and easily reachable possibilities to return the packaging since manufacturers kept a refundable deposit (mandatory deposit). For deposit-free, single-use PET Soft Drinks packaging, aluminium cans and drink cartons, SDMFs established and supported recycling programs to encourage consumers to recycle their Soft Drinks containers. They collaborated with waste management companies and recycling organizations to provide convenient and accessible recycling infrastructure such as recycling bins and collection centers. Nevertheless, SDMFs recovery of PET Soft Drinks packages was so low; all participants discussed how they lacked appropriate framework to access the Reverse Logistics network and paid more attention on the forward distribution and how individual SDMFs bore high rate of inefficiencies and ineffectiveness within the backward chain. P20 lamented that the low uptake of recycling was largely attributed to lack of a proactive recovery process which Kenya Association of Manufacturers through a company known as PETCO sought to address. Single-use PET Soft Drinks packages ended in the land fields where they were mixed with other packaging or combined with wrong disposed of items (green dot systems) and this resulted in contamination and residues to a greater extent and had a significantly adverse effect on the quality of recycling. As a result, Participants confirmed that only approximately 5% of single-use PET packaging sold annually was actually collected for recycling. The remaining 95% ended up in landfills and water bodies. SDMFs invested in research and development to design more recoverable packaging. For instance, one respondent narrates how as a firm they shifted from using green PET bottles to clear bottles that were more recyclable thus highly recovered. In an effort to recover packaging materials, P3 and P20 noted that:

"We have introduced initiatives to promote packaging recovery such as labelling our products with clear recycling instructions". (P3)

"Our company understands the importance of reducing waste and minimizing the environmental impact of our operations. We have partnered with local recycling facilities

(PETCO Kenya) to ensure the recovery and proper recycling of our packaging materials. By prioritizing packaging recovery, we aim to minimize the amount of waste generated and contribute to a more sustainable future." (P20)

SDMFs also implemented Remanufacturing as a key driver of their sustainable business practices. Participants confirmed that they have embraced the principles of a circular economy by implementing robust remanufacturing processes for their glass packaging. As a result of their fragile nature, glass bottles, makes the Reverse Logistics process more cumbersome as they are prone to get damaged due to loading, handling, transporting and storing. All Participants' firms used return glass bottles for remanufacturing purpose i.e. one undamaged glass bottle can be used for 1-5 times for refilling. This approach not only reduced SDMFs environmental footprint but also offered cost savings and new revenue streams. Remanufacturing was an essential part of SDMFs commitment to sustainability and creating a more resource-efficient supply chain. For PET packaging SDMFs have underway plans to continually invest in research and development to optimize their remanufacturing processes and explore innovative ways to maximize value recovery from returned PET packaging.

"When glass packaging is returned, we carefully disassemble and evaluate them to identify components that can be reused or reconditioned. By refurbishing and remanufacturing these components, we reduce the need for virgin materials and minimize waste". (P11)

All the Participants confirmed that economically Environmentally-Oriented Reverse Logistics brought direct gains such as reduced input material, reduced wastes, improved reputation, access to new markets and brand value which in turn results in increased profitability, Cost Efficiency and Market Share. These findings coincide with Bor (2020) that economic performance can accrue to an organization that effectively manages its Reverse Logistics schemes. Contrary to these findings, Alnoor et al. (2019) posit that Environmentally-Oriented Reverse Logistics may dwindle a firm's financial resources and increase costs thus there is a great possibility to create value enhancing networks in order to develop SDMFs' Environmentally-Oriented Reverse Logistics practices together. Mandota

(2015) confirms that Reverse Logistics positively and significantly influences organizational performance.

4.10.5 Green Supply Chain Management Practices, Firm Performance and Stakeholder Pressure

The fifth objective of the study was to examine the moderating effect of Stakeholder Pressure on the relationship between GSCM practices and performance of SDMFs in Kenya. To do this, Stakeholder Pressure generated from the data structure in figure 4 was used to explain the moderating effect of Stakeholder Pressure on the relationship between GSCM practices and performance of SDMFs in Kenya as explained below. All participants confirmed that their firms have experienced increasing ecological pressures from a variety of institutional players including market, governmental, and competitive sources. In response to these pressures they initiated GSCM practices. This analysis suggests that SDMFs were influenced by regulators, competitors and customers as the stakeholder pressure. Thus, Stakeholder pressure enabled SDMFs to adopt GSCM practices that were essential for achieving organizational performance.

All participants alluded that Kenyan government is putting pressure on SDMFs to move towards GSCM to protect their environment by developing some rules and regulations for them to formulate their environmental policies according to these rules. Participants were of the view that environmental regulatory pressure is one of the crucial stakeholders' pressure in adopting GSCM practices thus these regulations provided a framework and guidelines for SDMFs to follow, promoting environmentally responsible practices and organizational performance. Previous studies such as Graham, 2020 and Hasmi & Akram, 2021 agree with this finding that government regulatory pressure played a significant role in GSCM implementation of firms. In addition, participants claimed that regulators like the government can impose sanctions on their SDMFs if they don't comply with environmental policies they have issued. P6 noted that environmental regulations set by government required their SDMF to implement environmental systems such as cleaner production and ISO 14001 certification. Participants confirmed that the Kenyan government had taken steps to encourage and enforce GSCM practices in the Soft Drinks manufacturing sector by setting

environmental laws and regulations that set specific standards for waste management, emissions control, and other environmentally relevant aspects of business operations: introduced Extended Producer Responsibility programs for various product categories, including packaging waste; imposed regulations on packaging materials to promote sustainability; promoted GSCM practices through its procurement policies of preference to purchase products and services from environmentally responsible companies; and required companies to disclose their environmental performance, resource consumption, and waste management practices. P7 noted as below:

“The Government of Kenya last year proposed the banning of PET bottles and gave manufacturers six months to come up with a proactive recovery plan that would reduce PET waste in the country. As a result of this pressure, PET bottles take back scheme recovery initiative by Kenyan manufacturers (including our SDMF) was launched through a company known as PETCO (a product of negotiations between the Government of Kenya and manufacturers and follows the global trends of adoption of the Extended Producer Responsibility (EPR) concept). We hope PETCO will consolidate efforts around minimizing our PET waste footprint in the country”. (P7)

Participants also confirmed that competitive pressure played a prevalent role for GSCM practices and organizational performance. For example, P9 said that their SDMF was strongly influenced to learn and respond to natural environment issues by paying close attention to other SDMFs. With falling trade barriers and increasing local and foreign competition SDMFs have been more compelled to improve their performance. SDMFs felt higher pressures from competitors to improve their environmental practices, and more frequently promoted environmental practices with commensurate economic benefits. P13 noted that with further globalization of Kenya’s markets and trade, especially after Kenya’s entry into the WTO, their firm has experienced increasing pressures from their international competitors to implement environmental management. P20 noted that unfortunately, direct and rapid financial performance gains through environmental practice will probably take longer to envision. As a result, SDMFs may suffer short-term financial losses when seeking

to improve their environmental performance. However, in the long term, GSCM practices due to competitive pressure can bring better financial performance.

Participants noted that customer pressure was a major factor that motivated SDMFs to incorporate GSCM practices and responded with economic performance improvements. Customer pressure was in the form of demand for sustainable products, online petitions and boycotts to put pressure on SDMFs to adopt green practices as well as expectations for transparency on their environmental impact. P13 confirmed that their SDMF felt the pressure from customers to implement GSCM practices and this move earned them more customers and thus positively influenced their economic performance. P1 alluded that consumers support for green initiatives played a crucial role in influencing the implementation of GSCM practices by their SDMF through social media campaigns and Consumer Education and Awareness by consumer advocacy groups that conducted educational campaigns to inform consumers about the environmental impact of Soft Drinks manufacturing and the importance of green supply chain practices. These initiatives empowered consumers to make informed choices and actively supported SDMFs that prioritized sustainability. Customers demanded SDMFs to go towards green practices thus were pressured to respond according to customers' requirements because they realized if they did not satisfy customer's requirements, then their competitors would get competitive advantage and get their customers. This built institutional pressure on SDMFs.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This study aimed at establishing the effect of GSCM practices on performance of SDMFs in Kenya. The GSCM practices that were studied are; Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics. Performance was aggregated and consisted profitability, cost efficiency and market share. The study had Stakeholder Pressure as a moderating variable. This section presents a summary of the study findings. Conclusions are drawn and from which recommendations for future research provided

5.1 Summary of Research Findings

To address the study objectives, both quantitative and qualitative research study were undertaken. The study objectives were to establish the effect of GSCM practices on performance of SDMFs; and to establish the moderating effect of stakeholder pressure on the relationship between GSCM practices and performance of SDMFs. Based on the specific objectives, five research hypotheses were formulated for testing in response to the study objectives. As a result of findings from hypotheses tests, five null hypotheses were rejected. The specific findings relating to the study objectives are summarized in the following section.

5.1.1 Effect of Green Purchasing on performance of SDMFs

This objective was built on the hypothesized statement that Green Purchasing has no effect on performance of SDMFs. The study findings rejected the null hypothesis and established that firm performance was significantly influenced by Green Purchasing positively. The positive association as established by this study supported the Natural Resource Based View as advanced by Hart (1995) which considers EMS certification, evaluation of second-tier suppliers, evaluation of environmental performance records and use of supplier assessment instruments on environmental practices as criteria for selecting suppliers, collaboration with

suppliers on environmental issues and Green Product Preference as unique firm resources with the ability to promote profitability, market share and cost efficiency of a firm. The finding agrees with Balin & Sari (2023) findings under Resource Based View theory and supports Anane, (2020) assertion through the RBV and Relational View theories that Green Purchasing, as management best practice, positively influences firm performance. This implies that most of the participants were enthused about the Green Purchasing practices of their firms since through Green Purchasing practices, they have been able to enhance performance. This thereby demands organizations to adopt measures and strategies to help improve Green Purchasing practices to achieve efficiency in all procurement functions as supported by Anane (2020).

5.1.2 Effect of Green Packaging on the performance of SDMFs

This objective is grounded on the hypothesized statement that “Green Packaging has no effect on performance of SDMFs in Kenya”. The study findings rejected the null hypothesis and established a significant positive effect of Green Packaging on firm performance. Natural Resource-Based View theory as espoused by Maziriri (2020) mentioned that resource reduction strategies for packaging, primarily focuses on minimizing the amount of packaging used, thus uses less resources and creating less waste. However, the traditional short-sighted waste reduction and recycling practices should be revamped by incorporating more holistic sustainability bottom lines for the packaging to be of benefit to the future community and industry. Similarly, this finding agrees with Musalia (2018) notion in Life Cycle Assessment theory and Transaction Cost Economics theory that Green Packaging practices contribute positively to firm performance through reduced costs and concur Owusu-Bio (2016) findings that Green Packaging practices increases profitability of a firm by minimizing waste throughout transformation processes.

5.1.3 Effect of Green Distribution on the performance of SDMFs

This study objective is founded on the hypothesized statement that “Green Distribution has no effect on performance of SDMFs in Kenya”. The study findings rejected the null hypothesis and established that the effect of Green Distribution on firm performance was

statistically positive and significant. This finding corroborates the contention of Kirunga & Kihara (2018) in the Transaction Cost Economics, Resource Dependence, Stakeholder and Institutional theories that Green Distribution related firm practices such as; green transportation, green storage and collection of used packages for proper disposal are generally viewed positively by the society thus increasing market share and customer loyalty which in turn positively contribute to firm performance. Correspondingly, the result is in line with Yusuf (2020) contention that strategic green distribution practices such as collaboration with vendors to standardize packaging; increase in space utilization in trailers to minimize handling requirements; consideration of fuel factors in selection of transporters; and adoption of life-cycle assessment analysis to understand environmental capability of products.

5.1.4 Effect of Environmentally-Oriented Reverse Logistics on the performance of SDMFs

This objective is centered on the hypothesized statement that “Environmentally-Oriented Reverse Logistics has no effect on performance of SDMFs in Kenya”. It was discovered in this study that Environmentally-Oriented Reverse Logistics positively and significantly affect the performance of firms. As such, the null hypothesis was rejected. The study discovery supports Ebenezer & Zhuo (2019) and Mbovu & Mburu (2020) argument in RBV that Environmentally-Oriented Reverse Logistics practices are important intangible resources of a firm capable of improving firm performance through reduction of end-to-end supply chain costs, increase of efficiency of processes and in management of returned materials, image enhancement, reduction of regulatory compliance costs, getting new profits from sale or recycling of recovered products and provides opportunity to firms to build competitive advantage through social services, reliability and strong relationship with customers. Mandota (2015), Yu et al. (2018), Alnoor et al. (2019) and Bor (2020) support these findings with their studies establishing positive relationship between Environmentally-Oriented Reverse Logistics and firm performance.

5.1.5 Effect of GSCM practices on the performance of SDMFs in Kenya

This study global objective is grounded on the general null hypothesized statement that “GSCM practices do not significantly influence the performance of SDMFs in Kenya”. It was established in this study that Green Purchasing was the factor which increases the firm performance positively by highest percentage variation in performance, followed by EORL practices, Green Distribution and Green Packaging respectively. The findings established that all the four dimensions of GSCM practices statistically significantly influence firm performance. Thus, the study null hypothesis statement was rejected. Cumulatively, GSCM practices were found to be positively affecting the performance of SDMFs firms in Kenya. However, the study noted that a major increase in the effectiveness of Green Purchasing practices will equally create a major impact on the performance followed by EORL, Green Distribution and Green Packaging respectively.

5.1.6 Moderating effect of Stakeholder Pressure on the relationship between Green Supply Chain Management practices and the performance of SDMFs

This study objective is founded on the hypothesized statement that the relationship between Green Supply Chain Management Practices and firm performance of SDMFs is not influenced by Stakeholder Pressure. The results revealed that Stakeholder Pressure improves the relationship between GSCM practices and performance of SDMFs. Consequently, the study rejected the study null hypothesis. This study finding agrees with Adomako & Tran (2022); Hashni & Akram (2021) and Graham (2020) notion that Stakeholder Pressure positively influences the relationship between GSCM practices and firm performance. Similarly, Meixell et al. (2015) explains that the influence of different stakeholders is different for social and environmental issues in that employees and NGOs influence social sustainability more, while other stakeholders, e.g. government, competitors and customers, influence the environmental side of sustainability more was strongly supported by this study finding. Thus, the study rejected the null Hypothesis-Stakeholder Pressure has no significant moderating effect on the relationship between Green Supply Chain Management practices and performance of Soft Drinks Manufacturing Firms in Kenya and adopted the alternate hypothesis.

5.2 Conclusions

The study aimed to establish the effect of Green Supply Chain Management practices on the performance of SDMFs in Kenya. Additionally, the study sought to investigate the moderating effect of Stakeholder Pressure on the relationship between GSCM practices and firm performance. The study established that all the four GSCM practices significantly influenced performance of SDMFs in Kenya. The study conclusions are thus discussed under the study specific objectives as follows:

5.2.1 Green Purchasing and firm performance

The study provided evidence that Green Purchasing significantly positively influence the performance of SDMFs in Kenya. This implies that an increase in performance of SDMFs is likely through embracing Green Purchasing practices within the upstream of supply chain. This finding makes an important contribution, it identifies the variables (Supplier Selection, Supplier Collaboration, Green Product Preference) which can be manipulated to better predict the level of performance arising from Green Purchasing practices by SDMFs in Kenya. As a result, the study concludes that Green Purchasing practices positively influence firm performance.

5.2.2 Green Packaging and firm performance

The study established a significant positive relationship between Green Packaging and firm performance. This finding makes an important contribution in terms of isolating variables that constitute Green Packaging practices (Eco-Design, Eco-Labeling, Packaging Integration with Logistics and Supply Chain Management with Logistics and Supply Chain Management) that are key in terms of influencing firm's performance. It is therefore concluded in the study that Green Packaging practices within the operations of the firms impact positively on their performance significantly.

5.2.3 Green Distribution and firm performance

The third conclusion based on the third results is that Green Distribution practices as was practised by Soft Drinks manufacturing firms in Kenya improved their firm's performance levels through its interactive reduction effect. These findings further imply that dimensions of Green Distributions practices significantly amplify the effect of performance levels of

Soft Drinks manufacturing firms. The study can thus conclude that Green Distribution has a positive influence on the performance of SDMFs in Kenya.

5.2.4 Environmentally-Oriented Reverse Logistics and firm performance

The final objective was to determine the effect of Environmentally-Oriented Reverse Logistics on performance of Soft Drinks Manufacturing Firms in Kenya. It was determined that Environmentally-Oriented Reverse Logistics had a substantial effect on performance of Soft Drinks Manufacturing Firms in Kenya and accounted for substantial variance. The current study therefore concludes that Environmentally-Oriented Reverse Logistics practices are important since they positively affect a firm's performance.

5.2.5 Green Supply Chain Management practices and Firm Performance

In overall, Green Supply Chain Management practices were found to collectively significantly influence the performance of SDMFs in Kenya. Subsequently, the study has a basis to conclude that, aggregately, GSCM practices affect performance of SDMFs in Kenya.

5.2.6 Stakeholder Pressure, Green Supply Chain Management practices and Firm Performance

The study confirmed that Stakeholder Pressure moderates the relationship between GSCM practices and firm performance. This finding provides basis to conclude that Stakeholder Pressure to be specific Regulatory Pressure, Customer Pressure and Competitive Pressure improves the effect of GSCM practices on performance of SDMFs in Kenya.

In conclusion, the model study provides knowledge that more efforts in adopting and use of GSCM practices in a pressured environment, where the interests of key stakeholders such as regulators, customer and competitors are considered will improve performance in organizations.

5.3 Recommendations

In view of the findings and conclusions of the study, the following recommendations were made.

5.3.1 Green Purchasing and firm performance

Based on the first objective's findings and conclusion, the study recommends that Green Purchasing practices need to be implemented in organizations as a way of improving performance. Further, the study recommends that in order to intensify the effect of Green Purchasing practices on performance of SDMFs, these firms should improve adoption of Supplier Selection, Supplier Collaboration and Green Product Preference as these Green Purchasing practices had the strongest significant and positive effect on firm's performance. Specifically, firms should have clear but precise regulations to govern selection of suppliers, collaborations with suppliers should be done in an open manner and without bias as well as hold regular meetings with suppliers in order to share information and create long term relationships. Firms should also prioritize Green Product Preference and come up with policies and outlines to govern the same practise as well as have mechanisms for training of suppliers, and motivation of suppliers through awards.

5.3.2 Green Packaging and firm performance

Based on the second conclusion that Green Packaging practices are a critical antecedent of performance of SDMFs in Kenya, the following recommendations are made: First, technical design for use, for manufacture, for distribution, for product use and for the end of life of the product that attain the international and environmental standards to be put in place and adopted fully. Secondly, mandatory training and seminars to train firms' staff members on Green Packaging practices. Finally, top management should be supportive, and should offer attractive reward systems for employee motivation on the adoption of new and innovative ways of implementing Green Packaging practices such as eco labeling of products, use of biodegradable materials for packaging, providing information to customers on environment friendly products, re-using and recycling of packages and collection of used packages for proper disposal in their distribution processes as a way of managing their cost of production

and creation of customer loyalty. They should adopt Green Packaging practices beyond compliance requirement but for the environmental goo and there after enhance performance.

5.3.3 Green Distribution and firm performance

The third conclusion is that Green Distributions practices significantly amplify the effect of performance levels of SDMFs. In line with this conclusion, it is thus recommended in this study that managers of the SDMFs in Kenya should adopt Green Distribution practices specifically adoption of newer clean energy sources for production and transport, sourcing for new environmentally friendly systems to manage firm's operation to reduce wastage and emission during transportation, finally implementation of better distribution and network logistics.

5.3.4 Environmentally-Oriented Reverse Logistics and firm performance

The current study fourth conclusion is that Environmentally-Oriented Reverse Logistics practices are important since they positively affect a firm's performance. Subsequently, the study recommended that managers in the SDMFs should invest in the three R's of waste management that is, reusing, recycling and reducing wastes as well as focus on improving reverse logistics by investing on returnable containers. The three EORL practices are vital component of CSR. Firms with visible CSR policies have a tendency of creating customer loyalty and also conform to government environmental regulations thereby minimizing statutory fines for non-environmental management compliance. Additionally, the study recommends training of employees on new innovative ways of remanufacture and adoption of recovery of useful parts of the products especially packaging materials and arrangements with customers to return used packages as further strategies for managing cost of inputs and parts in their production process thereby increasing the profitability of the firms. The study therefore recommends the adoption of the 'five R's' of waste management that is Reusing, Recycling, Reducing, Recovery and Remanufacture as well as creating awareness of the same.

5.3.5 Moderating effect of Stakeholder Pressure on the relationship between Green Supply Management Practices and Firm Performance

The study found that Stakeholder Pressure positively moderates the relationship between GSCM practices and performance of SDMFs in Kenya. The study recommends SDMFs to consider government regulations, customers and competitors as key external stakeholders whose pressures, force and influence the adoption of GSCM practices and in turn influence organizational performance. This is in line with Meixell et al. (2015), who noted that the influence of different stakeholders is different for social and environmental issues in that employees and NGOs influence social sustainability more, while other stakeholders, e.g. government, competitors and customers, influence the environmental side of sustainability more. Boaventura et al., (2020) noted that such pressures are normally targeted at a group of companies within a particular industry as opposed to an individual company. The existence and response to various stakeholder pressures will cause the relationships between adopting practices and performance to vary. SDMFs should appreciate the important role played by stakeholders, both individually and collectively in driving GSCM efforts within companies. SDMFs should appreciate the fact that different stakeholder groups place different demands and expectations on firms and they should respond to different stakeholders in heterogeneous ways in accordance with the power, legitimacy and urgency with which they regard a particular demand (Vitolla et al., 2019).

5.4.6 Green Supply Chain Management Practices and Firm Performance

In line with Banik et al. (2020) views as pronounced in NRBV, business management practices laced with ecological thinking is a potential source for unique resources with capability of improving the overall performance with a positive significant effect on environment, the study established that GSCM practices; Green Purchasing, Green Packaging, Green Distribution and Environmentally-Oriented Reverse Logistics significantly positively influence the performance of SDMFs in Kenya. This study recommends SDMFs to plan for GSCM practices and create a relationship that links supply chain partners together to improve environmental sustainability and in turn improve firm performance.

5.4 Contribution to Knowledge and Suggestions for Further Studies

The study has contributed to the wider body of knowledge by providing evidence that firms need to have a continual focus in practicing green supply chain management under a pressured environment, where the interests of key stakeholders such as regulators, customer and competitors are considered as this will improve performance in organizations.

Based on the foregoing conclusions on the findings of this study, the researcher suggested the following future research directions in the field relating to the practice performance relationship.

First, this study used cross-sectional data to test the hypothesis on the relationship between Green Supply Chain Management practices, Stakeholder Pressure and performance of Soft Drinks Manufacturing Firms in Kenya. It only provided a snapshot picture at a single point in time. Therefore, there is need to conduct a longitudinal study to show change over time, provide sequence of GSCM practices and performance events and relate these events to particular exposures as well as further define these exposures with regards to presence, timing and chronicity thus provide even more conclusive evidence of the above relationship.

Given that the current study is limited to firms in one industry, the relationship between Green Supply Chain Management practices, Stakeholder Pressure and performance of SDMFs in Kenya would need to be validated by further research. Future studies to focus on future studies in other unrelated industry players through comparative studies between the players. Further researchers may extend this study to other sectors in Kenya to view the performance of other industries impacted by the implementation of GSCM practices and how they address Stakeholder Pressure.

Based on the specific objective ‘to establish the effect of Green Supply Chain Management practices on performance of SDMFs in Kenya’, the researcher proposes that studies be carried out on each of the construct of GSCM practices on sustainability performance of SDMFs apart from performance alone.

The study adopted Stakeholder Pressure as a moderator. However, the moderation effect was assessed collectively for all variables. Therefore, future scholars can assess the effect of the moderator on the individual Green Supply Chain Management practices and performance relationship. It would be also useful to provide more detailed insight of the impact of Stakeholders' Pressure on SDMFs. For instance, a series of case studies could provide more nuanced view of managerial decision making (i.e. how and why managers decide to respond to stakeholder pressure? and on the impact on firms' performance (i.e. what type of stakeholder pressure leads to more substantial changes in firms' performance?). Such studies can be done in a single context (i.e. SDMFs as in this study) or in a multiple context (i.e. manufacturing firms from different industries). In furtherance, subsequent scholarly works could employ structural equation modelling (SEM) to analyze cause-effect and moderations relationships.

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APPENDICES

Appendix I: Introduction Letter

Linet M. Mayieka,
P.O Box 210-40601
BONDO, JOOUST
Cell: 0781 512 164
Email: lynnmayieka@gmail.com

The Chief Executive Officer,
Organization's Name.....
Address.....

Dear Sir/Madam,

Reference: Online Questionnaires

I am a student at Jaramogi Oginga Odinga University of Science and Technology undertaking a Doctorate of Philosophy degree in Logistics and Supply Chain Management. As part of the academic requirements, am required to undertake a research in a relevant field to my course. My research study is titled; Green Supply Chain Management practices and the performance of Soft Drinks Manufacturing Firms in Kenya. I recognize your role as the head of this organization and wish to request your permission and help in carrying out this study. Please, find attached _____ online questionnaires to be filled by senior managers from five key departments as determined by the study (Supply Chain, Safety and Environment, Production, Finance and Marketing Departments) as discussed. In case of any enquiry, kindly contact me on line or email address given.

Thank you for your help.

Yours faithfully,

Linet M. Mayieka



Appendix II: Government Approval-NACOSTI



Appendix III: Ethics Approval: JOOUST IERC



**JARAMOGI OGINGA ODINGA
UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**DIVISION OF RESEARCH, INNOVATION AND OUTREACH
JOOUST-ETHICS REVIEW OFFICE**

Tel. 057-2501804
Email: erc@jooust.ac.ke
Website: www.jooust.ac.ke

P.O. BOX 210 - 40601
BONDO

OUR REF: JOOUST/DVC-RIO/ERC/E4

1st November, 2022

Linnet Moraa Mayieka
B162/4123/2017
JOOUST

Dear Ms. Mayieka,

**RE: APPROVAL TO CONDUCT RESEARCH TITLED "GREEN SUPPLY CHAIN
MANAGEMENT PRACTICES AND THE PERFORMANCE OF SOFT DRINK
MANUFACTURING FIRMS IN KENYA"**

This is to inform you that JOOUST ERC has reviewed and approved your above research proposal. Your application approval number is **ERC 34/11/22-07/02**. The approval period is from 1st November, 2022– 31st October, 2023.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations and violations) are submitted for review and approval by JOOUST IERC.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to NACOSTI IERC within 72 hours of notification.
- iv. Any changes, anticipated or otherwise that may increase the risks of affected safety or welfare of study participants and others or affect the integrity of the research must be reported to NACOSTI IERC within 72 hours.
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to JOOUST IERC.

Prior to commencing your study, you will be expected to obtain a research permit from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Francis Anga'wa', is written over a horizontal line.

for
Prof. Francis Anga'wa
Chairman, JOOUST ERC

Copy to: Deputy Vice-Chancellor, RIO

Director, BPS

DEAN, SBE

Appendix IV: Postgraduate Authorization



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: B162/4123/2017

Date: 15th September 2022

TO WHOM IT MAY CONCERN

RE: LINET MORAA MAYIEKA – B162/4123/2017

The above person is a bonafide postgraduate student of Jaramogi Oginga Odinga University of Science and Technology in the School of Business and Economics, pursuing a PhD in Logistics and Supply Chain Management. She has been authorized by the University to undertake research on the topic: *“Green Supply Chain Management Practices and the Performance of Soft Drink Manufacturing in Kenya”*.

Any assistance accorded her shall be appreciated.

Thank you.

A blue ink signature of Prof. Dennis Ochuodho is written over a circular official stamp. The stamp contains the text: "JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY", "DIRECTOR BOARD OF POST GRADUATE STUDIES", "SEP 2022", and "P. O. Box 210 - 40601, BONDO".

Prof. Dennis Ochuodho

DIRECTOR, BOARD OF POSTGRADUATE STUDIES

Appendix V: Questionnaire

Section A: Background Information

Please indicate the following data that characterize your company

Firm's demographic characteristics

1. What is your designation in your firm? (tick one)
☐ Senior Supply Chain Manager
☐ Senior Safety and Environment Manager
☐ Senior Production Manager
☐ Senior Finance Manager
☐ Senior Marketing Manager
☐ Others (please specify)
2. What is the ownership status of your firm? (tick one)
☐ Fully locally owned
☐ Fully foreign owned
☐ Joint locally and foreign owned
☐ Other (please specify)
3. What is the scope of market that is served by your firm?(tick one)
☐ Local
☐ Global
4. How long has your firm been in existence? _____ Years.
5. How many employees does your firm have (full time employees)? _____

Firm's environmental consciousness

6. Is your firm ISO 14001 Certified? (tick one)
☐ Yes
☐ No
7. Does your firm have an environmental management policy?
☐ Yes
☐ No

8. How often do you have inter-departmental meetings where you discuss environmental issues in a month?

☐ 0

☐ 1-2 times

☐ 3-4 times

☐ 5 or more times

9. (a) Does your firm have a budget for research and development specifically allocated to environmental management issues? (tick one)

☐ Yes (Go to Q9 (b))

☐ No (Go to Section B)

(b) What is the approximate amount of total budget for research and development allocated to environmental management issues in a year? (Tick one)

☐ Less than Ksh 500,000

☐ Ksh 500,001-Ksh 1,000,000

☐ Ksh 1,000,001- Ksh 2,000,000

☐ Above Ksh 2,000,000

SECTION B: GREEN SUPPLY CHAIN MANAGEMENT PRACTICES

10. Using the scale below, indicate by ticking appropriately, the extent to which your firm has practiced each of the following **Green Purchasing practices**. [1] Not at all at a scale of 1.0 [2] Small extent at a scale of 2.0 [3] Moderate extent at a scale of 3.0 [4] Great extent at a scale of 4.0 [5] Greater extent at a scale of 5.0

	Supplier Selection	1	2	3	4	5
1.	Our firm requires that suppliers must possess EMS certification (e.g. ISO 14001, BS 7750 or EMAS)					
2.	Our firm audits suppliers to evaluate compliance with environmental requirements					
3.	Our firm evaluates second-tier suppliers for environmentally-friendly practices					

4	Our firm evaluates actual environmental performance records including fines and penalties					
5.	Our firm uses supplier assessment instruments on environmental practices e.g. questionnaire filling during selection					
	Supplier Collaboration	1	2	3	4	5
6.	Our firms Supplier Relationship Management is aimed at promoting green					
7.	Our firm communicates on Green Purchasing KPIs with suppliers					
8.	Our firm rewards/awards suppliers for improvement in green practices					
9.	Our firm holds environmental awareness training and seminars periodically with suppliers					
10.	Our firm works to control the risks resulting from suppliers' operations					
	Green Product Preference	1	2	3	4	5
11.	Our firm provides design specifications to suppliers that include environmental requirement for purchased items					
12.	Our firm considers material environmental aspects (primary energy sources saving, energy saving, water saving, recyclable, re-usable, recoverable, toxic free and low chemical content items) in product use when purchasing products					
13.	Our firm considers material consumption in production of product when purchasing products					
14	Our firm considers waste production in product use when purchasing products					
15.	Our firm requires suppliers to use degradable and non-hazardous substance					

11. Using the scale below, indicate by ticking appropriately, the extent to which your firm has practiced each of the following **Green Packaging practices**. [1] **Not at all at a scale of 1.0** [2] **Small extent at a scale of 2.0** [3] **Moderate extent at a scale of 3.0** [4] **Great extent at a scale of 4.0** [5] **Greater extent at a scale of 5.0**

	Eco_Design	1	2	3	4	5
1.	Design for use of raw materials (selection of low-impact materials, non-hazardous materials, non-exhaustible materials, low energy content materials, recycled materials and recyclable materials)					
2.	Design for manufacture (optimization of production techniques, alternative production techniques, fewer production processes, low/clean energy consumption, low generation of waste and few/clean production consumables)					
3.	Design for distribution (less/clean packaging, optimized weight and volume of product and package, efficient transportation and transport mode)					
4	Design for product use (reduction of the environmental impact in the user stage, low energy consumption, clean energy source, few consumables needed during use, clean consumables during use and no energy/auxiliary material use)					
5.	Design for end of life (optimization of end-of-life system, Life-Cycle Assessment on environmental compatibility of packaging materials, reuse of product; remanufacturing, recycling of materials and clean incineration e.g. depolymerization of PET waste)					
	Eco_Labelling	1	2	3	4	5
6.	Adopted Eco-Labeling to describe the information of a product about the environmental impact associated with its use					

7.	Eco-Labeling criteria considers the general overall life cycle of a product					
8.	Considers Eco-Labeling to be a valuable tool for purposes of communicating its' products qualities as well as the firm's concern for the environment					
9.	Adopted Eco-Labeling to represent a tool to governments, manufacturers and consumers to address environmental problems associated with the firm's products					
10.	Supports the idea of private Eco-Labeling schemes existence for Soft Drinks Manufacturing Firms worldwide					
	Packaging Integration with Logistics and Supply Chain Management with Logistics and Supply Chain Management (PILSCM)	1	2	3	4	5
11.	Internal collaboration and coordination in packaging design among all affected departments					
12.	Integrate packaging and product design					
13.	Collaboration with packaging suppliers during the design process to ensure integration of green issues					
14.	Collaboration with other Soft Drinks Manufacturing Firms (even with the competition) to make joint packaging					
15.	Collaboration with retailers on packaging design and packaging collection					

12. Using the scale below, indicate by ticking appropriately, the extent to which your firm has practiced the following **Green Distribution practices**. [1] Not at all at a scale of 1.0 [2] Small extent at a scale of 2.0 [3] Moderate extent at a scale of 3.0 [4] Great extent at a scale of 4.0 [5] Greater extent at a scale of 5.0

	Environmentally Responsible Fleet Management	1	2	3	4	5
1.	Use of more fuel-efficient vehicles or alternative energy sources/hybrid fuel technology sources resulting in low GHG emission and more environmentally friendly vehicles					
2.	Use a good information system and innovative management to ensure more efficient loading, scheduling and routing.					
3.	Use logistics firms that abide to environmentally friendly principles or have EMS certification (e.g. ISO 14001, BS7750, EMAS), in case transport is outsourced.					
4	Proper maintenance programmes of vehicles to keep them in safe and efficient working condition					
5.	Sale of vehicles that have reached their end of useful life rather than leave them to fill the parking yard.					
	Eco_Distribution_Management	1	2	3	4	5
6.	Optimization of transport capacity through consolidation and scheduling (distribute products together rather than in smaller batches to ensure full vehicle loads for efficiency).					
7.	Deliver products directly to the user site.					
8.	Backhaul management to ensure high vehicle utilization (consolidate freight in case where used material and packaging is to be shipped back to the firm).					
9.	Locate near customers to reduce resources consumed in getting the product to them.					
10.	Implement technologies to reduce dependence on fossil fuels e.g. cruise control, reductions in left hand turns, GPS units, and automatic engine shut down devices					
	Eco_Network_Design	1	2	3	4	5

11.	Configuration of suppliers and distribution networks					
12.	Routing systems to minimize travel distances					
13.	Use of more direct shipping routes					
14.	Load freight using 'carpooling transportation' (cooperative dispatching mode)					
15.	Reverse Logistics network design to reduce transportation					

13. Using the weighted scale below, indicate by ticking appropriately, the extent to which your firm practiced the following **Environmentally-Oriented Reverse Logistics (EORL) practices**. [1] Not at all at a scale of 1.0 [2] Small extent at a scale of 2.0 [3] Moderate extent at a scale of 3.0 [4] Great extent at a scale of 4.0 [5] Greater extent at a scale of 5.0

	EORL_Innovation	1	2	3	4	5
1.	Maintain a database on the quantities and value of material and end of life products or packaging collected from consumers (formalization).					
2.	Create its own systems and procedures to monitor reverse flows of materials (customization).					
3.	Has its own way of handling returns (flexibility).					
4.	Developed information systems ability to handle EORL activities (information-related ability).					
5.	Created a connected marketing-operations interface to handle EORL activities (functional integration).					
	Product_Recovery	1	2	3	4	5

6.	Set up systems to recover used products and packaging material for reuse and recycling e.g. installation of collection points at the point of purchase.					
7.	Co-operates with vendors to encourage re-use of packaging materials.					
8.	Spread awareness among customers and the general public on the firm's product or packaging return material flow or take-back policy.					
9.	Employ individuals or firms to collect waste generated by the firm's products.					
10.	Encourage consumers, employees and the general public to return packaging materials for recycling purposes through rebates, bonuses and special incentives.					
	Re_manufacture	1	2	3	4	5
11.	Set up compression molding plant for returns especially PET plastics that use Polyethylene Terephthalate materials in molding process.					
12.	Train employees on re-manufacturing processes.					
13.	Perform redesign of products for reuse.					
14.	Design packaging that can be re-manufactured.					
15.	Rely on technology for depolymerization of PET wastes that uses no energy.					

SECTION C: STAKEHOLDER PRESSURE

14. Using the weighted scale below, indicate by ticking appropriately, the extent to which your firm experiences **stakeholder pressure** to practice GSCM practices. **[1] Not at all at a scale of 1.0 [2] Small extent at a scale of 2.0 [3] Moderate extent at a scale of 3.0 [4] Great extent at a scale of 4.0 [5] Greater extent at a scale of 5.0**

	Regulatory_Pressure	1	2	3	4	5
1.	Regional environmental regulations influence GSCM practices of our firm.					
2.	Stringent government regulations force our company to implement GSCM practices.					
3.	Potential conflicts between our firm and environmental regulators will affect our firm's GSCM practices implementation.					
4.	Management take timely and appropriate follow up actions on communication received from regulators.					
5.	There is improvement of relationship between our firm and regulators as a result of the pressure regulators exerted on our firm.					
	Competitive_Pressure	1	2	3	4	5
6.	Our competitors' earlier implementation of GSCM practices provide a benchmark and guidance for our company's GSCM practices.					
7.	Competitors have a strong influence on our firm's GSCM practices implementation.					
8.	The GSCM practices of our firm is affected by competitors GSCM practices.					
9.	Management take appropriate follow up actions on communication received from our firms' competitors					
10.	There is improvement of relationship between our firm and our competitors as a result of the pressure our competitors exerted on our firm					
	Customers_Pressure	1	2	3	4	5

11.	Increasing environmental consciousness of consumers has spurred our FIRM to implement GSCM practices.					
12.	Consumers have a strong influence on our firm's GSCM practices implementation.					
13.	The GSCM practices of our firm will affect customers' purchase of our products.					
14.	Management take timely and appropriate follow up actions on communication received from our firms' customers					
15.	There is improvement of relationship between our firm and our customers as a result of the pressure our customers exerted on our firm					

SECTION D: FIRM PERFORMANCE

15. Using the scale below, indicate by ticking appropriately, the following aspects on **firm performance measures** that your firm has experienced since embracing Green Supply Chain Management practices. [1] **Not at all at a scale of 1.0** [2] **Small extent at a scale of 2.0** [3] **Moderate extent at a scale of 3.0** [4] **Great extent at a scale of 4.0** [5] **Greater extent at a scale of 5.0**

Profitability Performance measures	1	2	3	4	5
1. The firm productive Cash Flow levels have reduced the firm bankruptcy probability					
2. The firm has experienced Growth from Profits					
3. Sales growth rate caused profitability to improve					
4. The amount of money earned by the firm relative to the amount of money spent by the firm has increased					

5. Firm has the ability to internally fund business ventures instead of using external sources					
Cost Efficiency Performance measures					
6. Firm has experienced waste management fee reduction					
7. Input costs of the firm has reduced due to recycle/re-use of material					
8. Firm has experienced energy cost reduction					
9. Environmental-related liability costs of the firm has reduced					
10. Transport costs of the firm has reduced					
Market Share Performance measures					
11. Firm has experienced an increase in sales volume of products					
12. The firm's sales in relation to the industry sales has increased					
13. Percentage of consumers who prefer our firm's brands over our competitors' brands (share of presence) has increased					
14. Our firm's product brands visibility and presence in the market (share of voice) is high compared to those of our competitors					
15. Percentage of our firm's total revenue generated through distribution channels (share of distribution) has increased compared to those of our competitors					

THANK YOU VERY MUCH FOR YOUR COOPERATION

Appendix VI: Introduction Letter

Linet M. Mayieka,
P.O Box 210-40601,
Bondo, JOOUST
Cell: 0781 512 164

The Chief Executive,
Organization's Name.....
Address.....

Dear Sir/Madam,

Reference: Face-to-face Interview

I am a student at Jaramogi Oginga Odinga University of Science and Technology undertaking a Doctorate of Philosophy degree in Logistics and Supply Chain Management. As part of the academic requirements, am required to undertake a research in a relevant field to my course. My research study is titled; Green Supply Chain Management practices and the performance of Soft Drinks Manufacturing Firms in Kenya. I wish to request your permission and participation in carrying out this study. If you agree to participate, I will interview you for no longer than 45 minutes immediately after receiving the online questionnaires from selected senior managers in your organization. You will be presented with the interview guide ahead of time. The full interview will be recorded if comfortable. You will be identified by a pseudonym for the study and your information will be protected before, during, and after this research project. After the interview, the audio recording will be transcribed, and you will be presented with a copy of the transcript for your review. This will be delivered via an e-mail to the address that you provide to me. After that, your participation will be over. At the conclusion of the dissertation research, you will be provided a write-up of the findings from the study. In case of any enquiry, kindly contact me on line or email address given.

Thank you for your help.

Yours faithfully,

Linet M. Mayieka

Appendix VII: Interview Questions

A: Preliminary questions

1. What is your position in this firm?
2. How long have you been in this position in this firm?
3. How old is your company?
4. What is your focus as a CEO?
5. What is your understanding of Green Supply Chain Management practices?

B: Green Purchasing and Performance

1. How has your firm embraced green Supplier Selection?
2. On what 'green' aspects has your firm collaborated with suppliers?
3. How has Green Product Preference contributed to the green sustainability initiatives of your firm?
4. What contribution does Green Purchasing has on your business performance?

C: Green Packaging and Performance

1. How has your firm embraced packaging Eco-Design?
2. How has you firm developed eco-labels that consider the firm's product environmental impact?
3. On what aspects has your firm integrated packaging with Logistics and Supply Chain Management?
4. How has Green Packaging impacted your business performance?

D: Green Distribution and Performance

1. What efforts has your organization put in place to ensure that its fleet of vehicles is managed in an environmentally friendly manner?
2. On what fronts does your firm practice Environmentally Responsible Distribution Management?
3. How has your firm implemented Eco-Network Design?

4. What is the performance outcome of Green Distribution in your firm?

E: Environmentally-Oriented Reverse Logistics

1. What innovations have your firm implemented in Reverse Logistics of packaging material?
2. What strategies have SDMFs put in place to ensure packaging materials are recovered after use?
3. How has your firm implemented Re-manufacture of packaging material?
4. How has Environmentally-Oriented Reverse Logistics contributed to your business performance?

F: Green Supply Chain Management practices, Stakeholder Pressure and Firm Performance

1. How do environmental regulations influence your firm's implementation of GSCM practices?
2. How does the pressure exerted by customers influence your firm to implement GSCM practices?
3. How do competitors put pressure on your firm to implement GSCM practices?
4. How does the pressure exerted by these stakeholders to implement GSCM practices affect your firm's performance?

G: Firm Performance

1. What are the performance factors that motivated your firm to implement Green Supply Chain Management practices?
2. How do Green Supply Chain Management practices affect Profitability's of your firm?
3. How has GSCM practices brought Cost Efficiency to your firm?
4. How has your Market Share been shaped as a result of implementation of GSCM practices?

Appendix VIII: List of Soft Drinks Manufacturing Firms in Kenya

NAME	LOCATION	PRODUCTS	CATEGORY
Aberdares mineral water company	Nairobi	Aberdares Mineral Water	Bottled water
African Oasis spring mineral water Co.	Nairobi	Oasis Mineral Water	Bottled water
African Safari Club Limited	Nairobi	Safari Mineral Water	Bottled water
Alpine cooler Limited	Nairobi	Drinking Water	Bottled water
Anspar Beverages Ltd	Nairobi	Cocacola,7UP, Schweppes	Fuzzy drink
Aquamist Ltd	Nairobi	Drinking Water	Bottled water
Atlas Limited	Nairobi	Drinking Water	Bottled water
Azam Bottlers Ltd	Nairobi	Drinking Water	Bottled water
B-Drinks Ltd	Nairobi	Fizz,B Natural	Fuzzy drink
Beverages Services Ltd	Nairobi	Dasani water, Minute Maid juice	Juice, Bottled water
Bidco Africa Ltd	Kiambu	Planet, Suntop, Jooz	Juice
Blue Wave Company Ltd.	Mombasa	Blue Wave	Bottled water
Booch	Nairobi	Booch	Juice
Bounty Limited	Nairobi	Juices, lemonade, Rendez Vous	Fuzzy drink
Brava food industries Ltd	Machakos	Brava juices	Juice
Brookside Limited	Nairobi	Drinking Water	Bottled water
Broomhill spring water	Nairobi	Drinking Water	Bottled water
Cartubox Industries (EA) Ltd.	Nakuru	Drinking water	Bottled water
Centro Foods Indus. Ltd.	Nairobi	Joy Drinking Water/Joy Juices	Juices/Bottled water
Chantalep Ltd.	Thika	Tazamu	Bottled water
Cherry Food Products Ltd	Nairobi	Sweet Cherries juice	Juice
Coastal Bottlers Ltd	Mombasa	Coca-Cola Soft Drinks	Fuzzy drink
Coca cola bottling company of Nairobi Ltd	Nairobi	Coca-Cola Soft Drinks	Fuzzy drink
Core Food Ltd.	Nairobi	Lemon juice, passion fruit juice	Juice
Couch potato Kenya Ltd.	Nairobi	Tango	Fuzzy drink
Crown beverages Ltd.	Nairobi	Mirinda, pepsi, Keringet	Fuzzy drink
Del monte Kenya	Kiambu	Passion, Mango, Apple juice	Juice
East Africa Bottlers Ltd.	Machakos	Coca-Cola Soft Drinks	Fuzzy drink
Equator Bottlers Limited (EBL)	Kisumu	Coca-Cola Soft Drinks	Fuzzy drink
Excel Chemicals	Nairobi	Quencher water , Juice	Juice/Bottled water
Flamingo Bottlers Limited	Nakuru	Coca-Cola Soft Drinks	Fuzzy drink
Frutos Food Processing limited	Nairobi	Frutos	Juice

Gambino Bottling Lt.	Nairobi	Aqua Drop	Bottled water
Gevalia	Nairobi	Iced/ready to drink caffeine	Iced/ready to drink caffeine
Golden Eagle Energy	Nairobi	Golden Eagle	Energy Drink
Grange Park Limited/Usafi Services Ltd.	Nairobi	Drinking Water	Bottled water
Highland Drinks Ltd	Nyeri	Club soda	Fuzzy drink
Jetlak Foods Limited	Thika	Fruitville juice, Drinking water	Juice, Bottled water
Kabisa Energy Drink	Nairobi	Kabisa	Energy Drink
Kadolta Limited	Nairobi	Drinking Water	Bottled water
Keringet	Nairobi	Drinking Water	Bottled water
Kevian Kenya Ltd	Nairobi	Afia	Juice
Kisii Bottlers Limited	Kisii	Coca-Cola, Fanta, Sprite, Stoney	Fuzzy drink
Kisima mineral	Nairobi	Drinking Water	Bottled water
K.K Beverages Private Ltd.	Nairobi	Prime juice/ Drinking water	Juice and Bottled water
Leverto juice company	Nairobi	Tunda	Juice
Lujusco Food & Beverages Ltd.	Nairobi	Jusco	Juices and Bottled water
Maisha Beverages Limited	Nairobi	Hola	Fuzzy drink
Maji works limited	Nairobi	Drinking Water	Bottled water
Mane Kenya Ltd	Nairobi	Aquafine	Juice
Mayday Marketing Ltd	Nairobi	Tree Top, Mirinda,Cfi	Fuzzy drink
Metro Bottling Company	Nairobi	Coca-Cola, Fanta, Sprite, Stoney	Fuzzy drink
Milly Fruits Processors Limited	Mombasa	Picana	Juice, Pulp & Concentrates
Monty's Kenya Ltd	Nairobi	Robinson juice, Real fruit	Juice
Mountain Slopes	Machakos	Mountain Slopes	Bottled water
Mt. Elgon Bottlers	Kitale	Everest Drinking water	Bottled water
Mt. Kenya Bottlers Limited	Nyeri	Coca-Cola Soft Drinks	Fuzzy drink
Nairobi Bottlers Ltd	Nairobi	Coca-Cola Soft Drinks	Fuzzy drink
Nero Water Company Kenya	Nairobi	Executive/ Life Drinking Water	Bottled water
Penrose Enterprises	Nairobi	Aberdare Well	Bottled water
Pepsi-Cola(EA) Ltd	Nairobi	Pepsi, Mirinda, Mountain Dew	Fuzzy drink
Picknpeel	Nairobi	Picknpeel juice	Juice
Premier food Limited	Nairobi	Peptang, Pep, Orchid Valley	Juice
Pride Industries Limited	Mombasa	Pride	Bottled water
Pure Bio Energy Drink Kenya	Nairobi	Bio Energy	Energy Drink
QAT Energy drink	Nairobi	Power Horse, Boom	Energy Drink
Quencher	Nairobi	Drinking Water	Bottled water
Ragos Food Industries Ltd.	Nairobi	Zamzam	Bottled water and juices
Razco Limited Juices	Nairobi	Lyons Maid Juice	Juice

Raha Food Products	Mombasa	Raha	Bottled water
Rift Valley bottlers Ltd	Eldoret	Coca-Cola, Fanta, Sprite, Stoney	Fuzzy drink
Safia Ltd.	Mombasa	Safia	Bottled water
Sameer Agriculture & Livestock Ltd.	Nairobi	Aquaclear	Bottled water
Sky Foods Limited	Kiambu	Treetop	Juice
Softa Bottling Co Limited	Nairobi	Kiri cola, softa	Fuzzy drink
Suntory beverages and food Kenya Ltd	Nairobi	Jelly Drink, Okky juzzy, Flurry	Juice
Sweetunda	Kiambu	SACfruits	Juice
Thara Orchards	Nairobi	Marilla Broks	Bottled water
Tri Clover Ltd.	Nairobi	Aqua 3	Bottled water
TruFoods Limited	Nairobi	Juices	Zesta, Trufu and Hey Ho
Twiga foods Limited	Nairobi	Gofrut	Juice
Unifresh Juices	Kiambu	Unifresh Manga	Juice
Valley Springs Enterprises Inc	Nairobi	Valley Springs	Bottled water
Varun Beverages Ltd	Nairobi	Tropicana, pepsi, mirinda	Juice concentrates/fuzzy
Victoria juice company limited	Machakos	Victoria Juice, Tamu Juice	Juice
Vilcos Foods Ltd	Nairobi	Vilcos	Bottled Water/Juice
Volcanica Kenya	Nairobi	Iced/ready to drink caffeine	Iced/ready to drink
Wachar Limited	Eldoret	Wachar	Bottled water
Wanjis Food industries Ltd	Nairobi	Orchid valley	Juice
World Trade Ltd.	Mombasa	Alpine drinking water	Bottled water
Zeit Ice Ltd.	Mombasa	Zeit	Bottled water
Zisan Food & Beverages Ltd.	Nairobi	Extra Power	Energy drinks and juices

Source: (Kenya Association of Manufacturers, 2022)

Appendix IX: Data set of variables

1. Green Purchasing

No.	SECB9 1	SECB9 2	SECB9 3	SECB9 4	SECB9 5	SECB9 6	SECB9 7	SECB9 8	SECB9 9	SECB9 0	SECB91 1	SECB91 2	SECB91 3	SECB91 4	SECB91 5
1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
4	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
5	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
6	1	1	1	1	1	1	1	1	1	1	1	3	1	1	3
7	5	1	1	1	1	1	1	1	1	1	1	3	1	1	3
8	4	1	1	1	1	1	1	1	1	1	1	3	1	1	3
9	3	1	1	1	1	1	1	1	1	1	1	3	1	1	3
10	2	2	2	2	2	2	2	2	3	2	2	2	2	2	3
11	5	2	2	2	2	2	2	2	3	2	2	2	2	2	3
12	4	2	2	2	2	2	2	2	3	2	2	2	2	2	3
13	3	2	2	2	2	2	2	2	3	2	2	2	2	2	3
14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	5	2	2	2	2	2	2	2	3	2	1	1	1	1	1
16	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	3	2	2	2	2	2	2	2	3	2	2	2	2	2	2
18	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2
19	2	5	2	2	2	2	2	2	3	2	2	2	2	2	2
20	2	4	2	2	2	2	2	2	3	2	2	2	2	2	2
21	1	3	1	1	1	1	1	1	2	1	2	2	2	2	2
22	1	2	1	1	1	1	1	1	2	1	1	3	1	1	1
23	1	5	1	1	1	1	1	1	2	1	1	3	1	1	1
24	1	4	1	1	1	1	1	1	2	1	1	3	1	1	1
25	1	3	1	1	1	1	1	1	1	1	1	3	1	1	1
26	1	2	1	1	1	1	1	1	1	1	1	3	1	1	1
27	1	5	1	1	1	1	1	1	1	1	3	2	5	5	5
28	1	4	1	1	1	1	1	1	1	1	1	2	5	5	5
29	1	3	1	1	1	1	1	1	1	1	2	2	5	5	5
30	1	2	1	1	1	1	1	1	2	1	3	2	5	5	5
31	1	5	1	1	1	1	1	1	2	1	1	2	5	5	5
32	1	4	1	1	1	1	1	1	2	1	2	2	5	5	5
33	1	5	1	1	1	1	1	1	2	1	1	2	5	5	5
34	2	4	2	2	2	2	2	2	3	2	2	2	5	5	5
35	1	1	5	1	1	1	1	1	2	1	3	2	5	5	5

36	1	1	5	1	1	1	1	1	2	1	4	2	5	5	5
37	1	1	5	1	1	1	1	1	2	1	5	2	5	5	5
38	1	1	5	1	1	1	1	1	2	1	1	2	5	5	5
39	1	1	4	1	1	1	1	1	2	1	2	2	5	5	5
40	1	1	4	1	1	1	1	1	2	1	3	4	5	5	5
41	5	1	4	1	1	1	1	1	2	1	4	4	5	5	5
42	5	1	4	1	1	1	1	1	2	1	5	4	5	5	5
43	5	1	3	1	1	1	1	1	2	1	1	4	5	5	5
44	5	1	3	5	1	1	1	1	2	1	2	4	5	5	5
45	5	2	3	5	2	2	2	2	2	2	3	2	5	5	5
46	5	1	1	5	1	1	1	1	2	1	4	2	5	5	5
47	5	2	2	5	2	2	2	2	2	2	5	2	5	5	5
48	5	2	2	5	2	2	2	2	2	2	2	2	2	2	2
49	4	2	2	5	2	2	2	2	2	2	2	2	2	2	2
50	4	2	2	5	2	2	2	2	3	2	2	2	2	2	2
51	3	1	1	4	1	1	1	1	2	1	2	2	2	2	2
52	3	1	1	4	1	1	1	1	2	1	1	1	1	1	1
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54	3	2	2	4	2	2	2	2	3	2	5	2	2	2	2
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59	1	1	1	1	3	5	1	5	5	5	4	3	5	3	3
60	1	1	1	1	5	5	3	4	4	4	4	3	4	5	3
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62	1	1	1	1	3	5	3	4	4	3	5	4	4	5	3
63	1	1	1	1	5	5	3	3	5	3	4	4	3	4	3
64	1	1	1	1	4	5	3	4	4	3	5	3	4	5	3
65	2	2	2	2	3	4	4	3	5	4	3	3	3	4	4
66	2	2	2	2	5	4	4	5	4	5	5	3	4	5	4
67	1	1	1	1	4	4	4	5	5	4	3	3	3	4	4
68	1	1	1	1	5	4	4	3	4	5	5	3	4	5	5
69	1	1	1	1	4	4	4	4	5	4	3	5	3	2	5
70	1	1	1	1	4	3	4	3	4	5	4	5	1	2	5
71	1	1	1	1	5	3	4	4	5	4	4	5	2	2	5
72	1	1	1	1	5	3	5	3	4	5	4	5	3	2	5
73	1	1	1	1	5	3	5	5	4	4	3	5	1	2	5
74	2	2	2	2	5	3	5	3	4	5	3	5	2	2	5
75	2	2	2	2	5	3	5	2	3	4	3	5	1	2	5
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2. Green Packaging

N o.	SECB1 101	SECB1 102	SECB1 103	SECB1 104	SECB1 105	SECB1 106	SECB1 107	SECB1 108	SECB1 109	SECB1 110	SECB1 111	SECB1 112	SECB1 113	SECB1 114	SECB1 115
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3. Green distribution

N O	SECB1 101	SECB1 102	SECB1 103	SECB1 104	SECB1 105	SECB1 106	SECB1 107	SECB1 108	SECB1 109	SECB1 110	SECB1 111	SECB1 112	SECB1 113	SECB1 114	SECB1 115
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34	3	3	3	4	4	5	4	2	3	3	3	2	2	2	2	2
34	4	3	3	4	4	5	4	3	2	2	3	2	2	2	2	2

4. Environmentally-Oriented Reverse Logistics (EORL).

N O	SECB1 201	SECB1 202	SECB1 203	SECB1 204	SECB1 205	SECB1 206	SECB1 207	SECB1 208	SECB1 209	SECB1 210	SECB1 211	SECB1 212	SECB1 213	SECB1 214	SECB1 215
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