GREEN PROCUREMENT PRACTICES AND ENVIRONMENT SUSTAINABILITY IN PRIVATE MANUFACTURING COMPANIES IN UGANDA: CASE STUDY OF EABL

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DECLARATION

I, Kwagala Mary, hereby declare that this research report is the result of my own effort and has not been published or submitted to any academic institution for any award. Proper acknowledgment has been given for any work that has been referenced from other authors.

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APPROVAL

This is to certify that the study report titled **"GREEN PROCUREMENT PRACTICES AND ENVIRONMENTAL SUSTAINABILITY IN PRIVATE MANUFACTURING COMPANIES IN UGANDA: A CASE STUDY OF EABL"** has been completed under my supervision and is hereby approved for submission for examination

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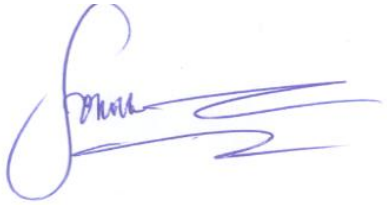

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My heartfelt thanks go to everyone who contributed to the successful execution and compilation of this work.

DEDICATION

I sincerely dedicate this report to my dear family and parents, whose steadfast moral support has been the foundation of my educational journey. May God bless you.

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ACRONYMS

USA: United States of America

UNWHO: United Nations World Health Organization

NEMA: National Environment Management Authority

BMAU: Budget Monitoring and Accountability Unit

UGGDS: Uganda Green Growth Development Strategy

KCCA: Kampala Capital City Authority

SDGs: Sustainable Development Goals

RBV : Resource- Based View

VRIO : Valuable, Rare, Inimitable, Organization

EABL: East African Breweries Limited

ABSTRACT

This research examined the relationship between various dimensions of Green Procurement practices and environmental sustainability at EABL in Uganda. Some of the objectives were to establish the extent of green procurement practices being used, to establish the relationship between green purchasing practices and environmental sustainability, to assess the relationship between the adoption of green procurement practices and environmental sustainability, to evaluate the effectiveness of green packaging strategies, and to analyze the efficiency of green distribution methods with regards to environmental sustainability at EABL. This study theoretically employed Institutional Theory, and the Resource-Based View (RBV) Theory. This study also employed a cross-sectional design in which data was collected from both officers and managers at EABL's headquarters who were involved in green procurement. Therefore, before the actual research was taken, there was pre-testing of employees where a simple random sample was used to gain access to employees who had knowledge and sensitive information about the topic of research. The sample size was 66, and the researcher distributed 66 questionnaires, all of which were filled and returned, making a response rate of 100%. Though EABL has effectively integrated green practices into the entire process, from purchasing all the way to distribution. Spearman correlation analysis revealed that green distribution methods had the strongest positive relationship with environmental sustainability ($r = 0.787$, $p < 0.01$), explaining 61.9% of its variance. Multiple regression results indicated that green purchasing practices ($B = 0.260$, $p < 0.001$) and green packaging strategies ($B = 0.223$, $p < 0.001$) significantly enhanced EABL's environmental sustainability, with an adjusted R^2 of 0.635.The findings indicated that EABL effectively integrated green practices across purchasing, manufacturing, packaging, and distribution, resulting in a strong positive relationship between green purchasing and manufacturing practices and improved environmental outcomes. While green packaging strategies significantly contributed to sustainability, uncertainty regarding the specific impacts of green distribution methods highlighted the need for further research in this area. Recommendations for EABL included ongoing investment in green purchasing initiatives, the establishment of stronger partnerships with suppliers focused on sustainable materials, and prioritization of research and development into green distribution methods to enhance delivery efficiency and reduce carbon footprints.

CHAPTER ONE:

INTRODUCTION:

1.0 Introduction

Environmental sustainability is a critical global concern that necessitates urgent attention and action across various sectors. Green Procurement practices have emerged as a proactive approach to address environmental degradation resulting from manufacturing operations. This chapter provides the background, the problem statement, research purpose, objectives, research questions, justification, significance, the conceptual framework, and the scope of the study.

Green procurement practices encompass the procedure of identifying suppliers and procuring goods that have no adverse impact on the environment (Sarkis, 2017). This contains procuring materials that can be reused several times and those that do not emit harmful pollutants. The utilization of materials that can be recycled, promoting resource efficiency, plays a pivotal role in conserving non-renewable resources from rapid depletion. Moreover, this approach involves the procurement of environmentally benign materials, even from suppliers uncertain about the environmental friendliness of their products, provided the purchaser is certain about the ecological safety of the goods.

Environmental sustainability refers to the practice of conducting social activities in a way that protects the natural environment, ensuring its preservation for both current and future generations (Zimon, Tyan, & Sroufe, 2020). This concept encompasses various activities (Sarkis, 2017; Ameknassi, 2016; De Sousa Jabbour, 2017), aiming to balance the needs of humanity with environmental conservation. It involves actions that meet present needs while safeguarding the environment for future generations, as it is their fundamental right to live in a healthy and sustainable environment (Sarkis, 2017). Globally, supply chain processes such as sourcing, manufacturing, and transportation have been identified as primary contributors to environmental sustainability challenges, particularly through greenhouse gas emissions.

1.2 Background to the Study

This section presents the historical background, theoretical background, conceptual background, and contextual background as below:

1.2.1 Historical Background

The idea of sustainability can be traced back to the industrial revolution, although environmental degradation was evident even before this period (OECD, 2008). Historical accounts from as early as 500 BC show that some ancient scholars raised concerns about environmental damage caused by human activities and suggested adopting less destructive methods. As societies advanced and technological progress improved living standards, it also led to imbalances in wealth distribution, excessive exploitation of global resources, and increasing greenhouse gas emissions.

In the 1970s, the concept of sustainability started gaining recognition in its current context. Notably, the year 1972 marked a turning point with sustainability being linked to humanity's future. This era also saw the first Earth Day celebration and the establishment of the U.S. Environmental Protection Agency (EPA) in 1970, followed by significant environmental regulations focusing on pollution control.

The modern understanding of sustainability was formally introduced in 1987 through the Brundtland Report, titled "Our Common Future", which was developed under the auspices of the United Nations by representatives from multiple countries. Today, sustainability is acknowledged as a global imperative, founded on the principle that human survival and well-being are fundamentally dependent on the health of the natural environment.

1.2.2 Theoretical Background

Institutional Theory suggests that businesses often adopt specific strategies in response to external societal and regulatory pressures (Scott, 1994). Jennings and Zandbergen (1995) expanded this perspective by analyzing how institutional forces influence organizations to adopt environmentally responsible practices. Subsequent studies, including those by Sarkis et al. (2010), have demonstrated how these external pressures encourage the implementation of green procurement initiatives.

The Resource-Based View (RBV) of the firm posits that organizations achieve a competitive advantage through the possession of valuable, rare, inimitable, and non-substitutable resources

(Melville, Kraemer, & Gurbaxani, 2004). These resources include tangible and intangible assets, organizational capabilities, and unique processes. Hart (1995) emphasized that environmental factors can act as barriers to competitiveness, thereby necessitating firms to utilize environmental strategies as a source of competitive differentiation.

Core Competency Theory, introduced by Prahalad and Hamel (1994), focuses on the unique abilities that enable firms to outperform competitors. Core competencies are bundles of skills and technologies that allow organizations to deliver unique value. Lawson and Lorenz (1999) further highlighted the importance of channeling resources to enhance these competencies. Within the RBV framework, developing core competencies in areas like green procurement is essential for firms aiming to achieve market leadership, including those listed on the Nairobi Securities Exchange (NSE).

Stakeholder Theory, primarily defined by Freeman (1984), broadens the focus beyond shareholders to include all individuals or groups affected by a company's operations. Alkhafaji (1989) emphasized that organizations have obligations to various stakeholders, especially when their activities impact the environment through pollution, waste generation, deforestation, and harmful emissions. Firms are therefore expected to adopt practices that minimize these negative externalities and actively engage in environmental stewardship.

Collectively, these theories underscore a growing shift towards adopting green procurement practices and prioritizing environmental sustainability, a trend that is increasingly evident in organizations like East African Breweries Limited (EABL) in Uganda.

1.2.3 Conceptual background

Green procurement practices encompass the procedure of identifying suppliers and procuring goods that have no adverse impact on the environment (Sarkis, 2017). This encompasses the acquisition of materials that can be reused multiple times and those that do not release harmful pollutants. The utilization of materials that can be recycled, promoting resource efficiency, plays a pivotal role in conserving non-renewable resources from rapid depletion. Moreover, this approach involves the procurement of environmentally benign materials, even from suppliers

uncertain about the environmental friendliness of their products, provided the purchaser is certain about the ecological safety of the goods.

Environmental sustainability refers to the practice of conducting human activities in a manner that safeguards the natural environment, ensuring it remains conducive for both present and future generations (Zimon, Tyan, & Sroufe, 2020). According to Sarkis (2017), Ameknassi (2016), and De Sousa Jabbour (2017), environmental sustainability emphasizes balancing human needs with the preservation of natural resources, recognizing the right of future generations to enjoy a healthy and pleasant environment.

For this study, environmental sustainability is measured through four key indicators: energy efficiency, resource conservation, reduction of hazardous waste, and reduction of greenhouse gas emissions.

1.2.4 Contextual background

In Uganda's manufacturing sector, the push for efficient use of resources has encouraged some firms to adopt eco-friendly practices. These green initiatives not only protect the environment but also slow down the depletion of essential natural resources. For instance, companies are increasingly turning to low-energy technologies, using materials that can be recycled or reused, and embracing modern production methods that lower resource consumption while enhancing product quality. Despite these efforts, many manufacturers in Uganda have yet to implement practices like reverse logistics for recycling, primarily due to limited awareness and knowledge about green practices in developing economies.

Another critical dimension of environmental sustainability considered in this study is ecological balance the harmonious relationship between human activities and natural ecosystems. In Kampala, this balance is being disturbed, as rapid industrialization leads to deforestation and habitat loss. The clearing of vegetation for factory construction has resulted in the disappearance of wildlife habitats and the endangerment of certain species. These developments make ecological balance a relevant indicator for assessing environmental sustainability in the area, as it reflects the extent to which industrial growth coexists with environmental preservation.

Globally, the urgency of environmental sustainability has increased, with more frequent and severe natural disasters linked to environmental degradation. Companies are now under pressure to align

their operations with green supply chain practices to mitigate these impacts (Tseng, Chiu, & Liang, 2017). Manufacturing activities, in particular, contribute significantly to greenhouse gas emissions, thereby accelerating climate change (Hendriks et al., 2017). Notable examples include the devastating wildfires in the Amazon, California, and Australia, which caused massive losses of forests, wildlife, human lives, and infrastructure (San-Miguel-Ayanz et al., 2020).

In Africa, environmental challenges are equally concerning. A study in Zimbabwe's Mount Darwin district revealed a gap between environmental issues and public awareness. Although the region faced heatwaves and destructive storms, many community members remained unaware or dismissive of environmental risks (Ncube & Tawodzera, 2019). This disconnect highlights the critical need for environmental education and the widespread adoption of sustainable practices across African countries.

In Uganda, poor environmental sustainability is evident through recurring issues such as floods, droughts, cholera outbreaks, and pollution caused by manufacturing industries and human activities (Budget Monitoring and Accountability Unit, 2018).

Kampala, Uganda's capital, faces significant environmental challenges, with air pollution levels seven times above the acceptable limit set by the UNWHO (World Air Quality Report, 2021). Improper waste disposal, littering, and insufficient waste management have resulted in blocked drainage systems, leading to floods and the spread of disease (NEMA, 2018). Additionally, the high cost of waste collection has led to a culture of improper waste disposal, which exacerbates the city's environmental issues.

Despite efforts by organizations such as the NEMA and KCCA to promote environmental sustainability, the situation remains critical.. However, these efforts have not yet yielded the desired results (Ministerial Policy Statement, MWE, FY 2020-2021). Green procurement practices have been identified as a key strategy for enhancing sustainability (Sarkis, 2017).

1.2 Problem statement

Environmental sustainability is a critical global issue, as emphasized by the United Nations' SDGs, which advocate for a balanced coexistence between economic growth and environmental conservation. However, Uganda continues to face significant challenges in this regard. These challenges include frequent droughts, pollution of air and water, improper wetland management,

and the widespread encroachment on wetlands for industrial construction, often done with little regard for the environment. Inadequate waste management systems, persistent flooding, and the loss of lives and crops in affected regions further highlight the gravity of the situation (Akiyode, Katongole, & Tumushabe, 2018). Additionally, the misuse of wetlands is exacerbated by unrelenting human activities and poor waste disposal practices, which negatively impact the environment (NEMA Report, 2017/2018).

Various governmental and non-governmental organizations in Uganda have taken initiatives to educate the public on environmentally responsible practices. Despite the implementation of strategies, the problem is growing, with disasters becoming more frequent and devastating, posing an increased risk of fatalities and widespread damage (Choudhary, Nayak, Dora, Mishra, Ghadge, 2019). This situation is primarily driven by the ongoing warming of the planet due to carbon emissions, particularly from supply chains centered around manufacturing, as noted by Sarkis (2017). In Kampala, air pollution has reached levels that are seven times worse than the limits recommended by the WHO (World Air Quality Report, 2021). The prevalence of littering and inadequate garbage collection further contributes to environmental degradation by blocking drainage systems and causing floods. The city's garbage collection is costly, with residents dumping waste on roadsides or in drainage trenches (Budget Monitoring and Accountability Unit, 2018). This has led to a littering culture, causing flooding. Traditional supply chain practices in Uganda are causing unprecedented environmental sustainability challenges (NEMA, 2018). The manufacturing sector exemplified by the case of EABL, contributes significantly to economic sustainability, but its environmental impact is substantial, encompassing the depletion of non-renewable raw materials, reclamation of wetlands for industrial expansion, and vehicular emissions that compound air pollution. The misalignment between economic objectives and environmental imperatives is particularly evident in the context of EABL's operations. Hence the study aims to assess the Green Procurement practices and environment sustainability in manufacturing companies in Uganda.

1.3 Objectives

1.3.1 General objective

To investigate the relationship between various Green Procurement practices and environmental sustainability in East African Breweries Limited (EABL), Uganda.

1.3.2 Specific Objectives

i. To examine the relationship between the implementation of green purchasing practices and the environmental sustainability of EABL.

ii. To assess the relationship between the effectiveness of green packaging strategies and the environmental sustainability of EABL.

iii. To analyze the relationship between the efficiency of green distribution methods and the environmental sustainability of EABL.

1.3.3 Research Questions

i. What is the nature of the relationship between the implementation of green purchasing practices and the environmental sustainability of EABL?

ii. What is the relationship between the effectiveness of green packaging strategies and the environmental sustainability of EABL?

iii. How does the efficiency of green distribution methods correlate with the environmental sustainability of EABL?

1.4 Hypotheses of the study

H1: Green purchasing is positively associated with Environment sustainability.

H3: Green packaging is positively associated with Environmental sustainability.

H4: Green distribution is positively associated with Environmental sustainability.

1.5 Justification of the study

Environmental Imperatives

The ecological crisis faced by the world demands immediate action. Manufacturing operations, despite their economic significance, often result in environmental harm, including pollution, resource depletion, and habitat destruction. Investigating green procurement practices within manufacturing companies is crucial to determine how these practices can serve as tools for sustainable environmental management.

Industrial Impact

Manufacturing companies exert substantial influence on the environment through their raw material extraction, production processes, and waste generation. The case of EABL exemplifies the pivotal role that manufacturing companies play in the economy

Economic and Social Concerns

While economic growth is essential, it should not be at the expense of environmental health. Unchecked manufacturing practices can lead to detrimental consequences, including health issues, reduced quality of life, and socioeconomic disparities. By investigating green procurement practices in manufacturing, the study seeks to identify ways to balance economic gains with environmental protection.

Global Commitments

International agreements and frameworks, such as the SDGs), underscore the need for industries to adopt sustainable practices. Companies are increasingly under pressure to align with these commitments, which emphasizes the significance of thoughtful the relationship between green procurement practices and environmental sustainability.

Local Context

The specific context of Uganda, characterized by environmental challenges such as pollution, wetland degradation, and inadequate waste management, calls for tailored solutions. The study provides an opportunity to investigate how green procurement practices can be practically applied to address local environmental concerns.

Gap in Research

This study aims to fill this gap and contribute valuable insights for future research and policy development.

Potential for Change

The study can influence industry practices, regulatory policies, and strategic decision-making, ultimately fostering a greener manufacturing landscape.

1.6 Significance of the study

Policy Level

This study will generate evidence-based insights that will be valuable to policymakers and regulatory bodies in Uganda. The findings can be instrumental in informing the development, review, and strengthening of environmental policies, standards, and regulations that encourage or mandate the adoption of green procurement practices. It will also inform the integration of green procurement into Uganda's Vision 2040, National Development Plans (NDP), and environmental management policies spearheaded by the National Environment Management Authority (NEMA) and other relevant agencies.

Practitioners

The study will be beneficial to practitioners in the manufacturing industry, particularly supply chain, procurement, sustainability, and operations managers. By exploring the specific green procurement practices that correlate with environmental sustainability, the research will offer practical and actionable recommendations that managers can implement to balance environmental stewardship with operational efficiency and cost-effectiveness. Moreover, the study will serve as a guiding tool for companies aiming to integrate green procurement strategies into their corporate social responsibility (CSR) programs, environmental management systems (EMS), and sustainability reporting, thus enhancing their reputation, compliance levels, and long-term competitiveness.

Fellow Scholars

The study's contextual focus on Uganda will help fill the research gap in the African region, where empirical studies on green procurement and environmental sustainability remain limited. Furthermore, the research will provide a foundation for comparative studies, interdisciplinary research, and further academic inquiries into the effectiveness of green procurement in addressing pressing environmental challenges in developing economies.

1.7 Scope

The research is limited to the manufacturing context, encompassing EABL's supply chain activities, including sourcing, production, distribution, and packaging. It delves into the extent of adoption and effectiveness of green practices within EABL's operations, seeking to establish positive associations between these practices and environmental sustainability.

Geographical Scope

The study is geographically confined to Uganda, with a primary focus on EABL as the case study company. EABL operates within Uganda, making it a suitable representative for the broader manufacturing landscape in the country. The research does not extend beyond the boundaries of Uganda and does not include comparisons with manufacturing companies in other countries.

1.8 Conceptual framework

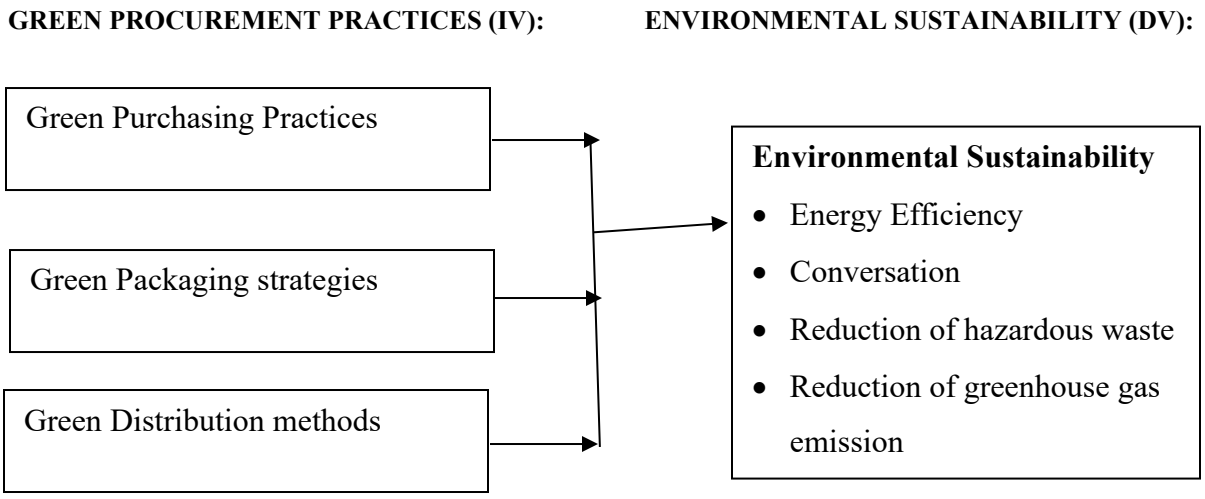

Figure 1.1: Model showing the conceptual framework.

Source: Adopted from Ahmad A, Ikram A, Rehan MF and Ahmad A (2022)

Explanation

The conceptual framework for this study establishes the relationship between Green Procurement Effectiveness as the independent variable and Environmental Sustainability as the dependent variable, focusing on East African Breweries Limited (EABL) in Uganda. Green Procurement Effectiveness refers to the extent to which EABL integrates environmentally responsible practices into its procurement processes, enabling the company to reduce its environmental footprint across the supply chain. This variable is operationalized through three key dimensions: Green Purchasing Practices, Green Packaging Strategies, and Green Distribution Methods. Green Purchasing Practices involve the selection of suppliers and materials that adhere to eco-friendly standards, ensuring that products procured are sustainable, non-toxic, and support resource efficiency. Green Distribution Methods emphasize the use of environmentally friendly transportation and logistics

systems, such as route optimization, fuel-efficient vehicles, and reduced carbon footprint in delivery operations. These practices collectively influence Environmental Sustainability, which is the dependent variable in the framework and is reflected through four main indicators: Energy Efficiency, By implementing effective green procurement practices, EABL is expected to enhance its energy efficiency by optimizing energy use in production and operations, promote conservation by ensuring sustainable resource use, minimize the generation and disposal of hazardous waste, and lower greenhouse gas emissions, thus contributing to the broader goal of environmental protection. This framework is adapted from Ahmad et al. (2022) and contextualized to the Ugandan manufacturing sector.

CHAPTER TWO:

LITERATURE REVIEW

2.0 Introduction

This segment analyses the literature on the concept of various green procurement practices and environmental sustainability in East African Breweries Limited (EABL), Uganda.

2.1 Theoretical Literature Review

The study was grounded in two key theories: Institutional Theory and the Resource-Based View (RBV) Theory.

2.1.1 Institutional Theory

Institutional theory suggests that organizations adopt certain strategies in response to external influences (Scott, 1994). These strategies are designed to enhance the organization's legitimacy and acceptance among customers and other stakeholders. Isomorphic pressures coercive, normative, and mimetic drive organizations to adopt similar practices across industries (DiMaggio & Powell, 1983). Jennings and Zandbergen (1995) explored the integration of environmental practices within this institutional framework, while other researchers have highlighted the positive effects of these pressures on green procurement practices (Sarkis et al., 2010).

However, while Institutional Theory offers valuable insights, it is not without limitations. Critics have argued that the theory tends to overemphasize the role of external influences while underestimating the internal dynamics that drive organizational behavior (Delmas & Toffel, 2008). Specifically, it portrays firms as largely reactive entities, failing to fully account for internal leadership, resource endowments, and innovation capacity that can proactively shape sustainable practices. Additionally, it does not adequately explain why some firms adopt green practices more aggressively than others, even within similar institutional environments.

2.1.2 Resource Based View Theory

Given these gaps, it becomes essential to complement Institutional Theory with perspectives that focus on internal organizational factors, such as the **Resource-Based View (RBV)**. The RBV, as articulated by Cardeal and Antonio (2012), emphasizes that a firm's sustained competitive advantage arises from the possession and effective utilization of resources that are Valuable, Rare,

Inimitable, and Organized (VRIO). These resources include both tangible assets, such as technology and infrastructure, and intangible assets, such as organizational knowledge, capabilities, and culture.

In the realm of green procurement and supply chain management, the RBV extends its relevance by highlighting how internal capabilities such as environmental management systems, green innovation capacity, and eco-design competencies can enable firms to not only respond to institutional pressures but to also proactively shape their competitive landscape. Hart (1995) further expands the RBV by integrating environmental considerations, asserting that firms that develop competencies to manage environmental resources, such as sustainable sourcing or energy efficiency, can create unique competitive advantages that are difficult for competitors to replicate.

Nonetheless, the RBV is also critiqued for its internal focus, sometimes neglecting the role of dynamic external environments and institutional pressures. It assumes that resource conditions are relatively stable, which may not hold true in rapidly changing sustainability landscapes.

Therefore, in this study, the application of RBV is justified as it provides a complementary and balancing perspective to Institutional Theory. By integrating both theories, a more holistic framework is established one that recognizes the interplay between external institutional pressures driving legitimacy and internal capabilities enabling firms to leverage green procurement practices as a source of innovation and competitive advantage.

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2.1.3 Conclusion on the Theories

This study employed the RBV Theory, as it effectively explains how a firm's acquisition of core resources and established capabilities can transform institutional enablers into improved performance outcomes. By integrating these perspectives, the study provides a comprehensive framework for understanding green procurement practices at EABL.

2.2 Conceptual review/Conceptual framework

2.2.1 **Green Procurement** practices

Green procurement practices refer to the integration of environmentally responsible criteria into procurement activities to reduce negative environmental impacts while enhancing operational efficiency (Zhu & Sarkis, 2004). This concept encompasses several key dimensions, including green purchasing, green packaging, and green distribution. Green purchasing involves selecting products and services that meet environmental standards and prioritize sustainability (Carter & Rogers, 2008). Green packaging refers to using eco-friendly materials and sustainable designs to reduce waste and minimize the carbon footprint associated with packaging processes (Puvanasvaran et al., 2012). Green distribution involves implementing environmentally responsible logistics practices aimed at reducing emissions and optimizing fuel consumption during the transportation process (Sarkis, 2012).

The adoption of green procurement practices has been widely discussed by various scholars. For instance, Safdar et al. (2024) found that organizations embracing green procurement practices often seek suppliers who align with their environmental goals, which enhances both sustainability and competitiveness. Rejeb et al. (2024) in their bibliometric review, examined the global adoption of green procurement practices and highlighted the challenges firms face in overcoming barriers such as cost and supply chain complexities. Moreover, Acquah et al. (2023) emphasized the importance of green procurement in achieving organizational legitimacy and accessing green finance, underscoring its role in promoting sustainability within the business community. These insights demonstrate that while green procurement is a powerful tool for environmental sustainability, its implementation can be hindered by factors such as lack of supplier commitment, high costs, and regulatory challenges.

Green Purchasing

Green purchasing refers to the process of selecting and acquiring products or services that meet specific environmental criteria, such as being energy-efficient, recyclable, or made from sustainable materials (Carter & Rogers, 2008). This practice helps organizations reduce their ecological footprint and promote sustainable consumption. The importance of green purchasing

lies in its potential to influence supply chains by encouraging suppliers to adopt more sustainable production methods, thereby driving environmental improvements across industries.

Scholars have extensively discussed the role of green purchasing in organizational sustainability. According to Sarkis et al. (2010), one of the main barriers to green purchasing is the higher cost of eco-friendly products, which can deter companies from fully implementing these practices. Despite these challenges, the long-term benefits of green purchasing, such as improved brand image and customer loyalty, make it a key component of sustainable procurement strategies.

Green Packaging

Green packaging refers to the use of environmentally friendly materials and design processes aimed at reducing waste, enhancing recyclability, and minimizing the carbon footprint of packaging (Puvanasvaran et al., 2012). This practice focuses on using biodegradable, recyclable, or reusable materials instead of conventional packaging that contributes to pollution and resource depletion. The growing demand for sustainable packaging has pushed companies to innovate and develop eco-friendly alternatives that can reduce environmental harm while maintaining product safety and functionality.

Several scholars have examined the impact of green packaging on both the environment and business operations. For example, Puvanasvaran et al. (2012) found that adopting green packaging strategies leads to reduced waste and lower production costs, thus offering economic benefits to firms. Furthermore, research by Rejeb et al. (2024) suggests that consumers are increasingly concerned with the environmental impact of packaging, and businesses that prioritize green packaging are more likely to enhance their market share by appealing to eco-conscious customers. However, implementing green packaging is not without challenges, including higher production costs and limited availability of sustainable materials. Despite these barriers, the push for greener alternatives in packaging continues to grow, driven by both regulatory pressures and consumer preferences.

Green Distribution

Green distribution refers to the implementation of environmentally responsible logistics and transportation practices aimed at reducing emissions, optimizing fuel consumption, and minimizing waste in the distribution process (Sarkis, 2012). This practice is crucial for improving the sustainability of the supply chain, as transportation and logistics often contribute significantly to a company's carbon footprint. Green distribution involves strategies such as route optimization, the use of electric or fuel-efficient vehicles, and the consolidation of shipments to reduce environmental impact.

The importance of green distribution has been discussed in several studies. Sarkis (2012) emphasizes that green logistics practices not only reduce environmental impact but can also lead to cost savings by improving operational efficiency. Research by Acquah et al. (2023) highlights the role of green distribution in enhancing organizational legitimacy, as companies that adopt sustainable logistics practices are perceived more favorably by consumers and stakeholders. Additionally, Safdar et al. (2024) found that green distribution contributes to long-term competitive advantages by improving brand reputation and fostering stronger relationships with environmentally conscious consumers. However, despite these benefits, green distribution practices can be challenging to implement, particularly for companies with complex supply chains or limited access to sustainable transportation options.

2.2.2 Environmental Sustainability

Environmental sustainability in business refers to practices that prioritize the protection of the environment while balancing economic growth, social welfare, and corporate performance (Ahmad, Yaqub & Lee, 2024). It emphasizes adopting strategies that reduce negative environmental impacts, promote resource efficiency, and contribute to the long-term preservation of ecosystems. Sustainable business practices not only focus on reducing pollution and waste but also integrate sustainable procurement, energy efficiency, and renewable resource usage into corporate strategies.

Wolniak, Gajdzik, and Grebski (2023) highlight the benefits of environmental sustainability in business, including reduced operational costs, improved brand image, and compliance with environmental regulations. Businesses that incorporate environmental sustainability into their strategies are better positioned to attract eco-conscious consumers and investors, enhancing their competitive advantage.

Furthermore, digital transformation is increasingly playing a crucial role in driving environmental sustainability in businesses. Feroz, Zo, and Chiravuri (2021) discuss how integrating sustainability into digital business strategies can lead to greater efficiencies and environmental benefits. Industry 4.0 technologies, as explored by Javaid et al. (2022), are also enhancing businesses' ability to optimize resource usage and reduce waste through automation. These advancements enable businesses to operate more sustainably while maintaining profitability and competitiveness.

2.3 Review according to objectives.

2.3.1 Green purchasing and Environment sustainability.

Chu et al. (2017) highlighted that in industrial parks, the adoption of green sourcing practices enables new manufacturers to adapt more easily. De Carvalho et al. (2020) noted that in developing countries like Uganda, companies face challenges in engaging suppliers who meet sustainability standards. The NEMA plays a critical role in educating top management on the importance of green sourcing (National Environment Act, 2019). The slow adoption of green practices in Uganda calls for enhanced cooperation between public and private sectors to align with sustainability goals. According to Khan, Yu, and Farooq (2023), organizations with strong green capabilities are better positioned to implement effective green purchasing practices, thereby enhancing their overall sustainability performance. These capabilities support organizations in integrating environmental concerns into procurement decisions, supplier engagement, and product lifecycle management, ultimately contributing to improved triple bottom line (TBL) performance balancing economic, social, and environmental outcomes.

Khan, Yu, Umar, et al. (2022) further emphasize that green purchasing is a critical lever for

sustainable operations, as it ensures the selection of suppliers and products that align with environmental objectives, thereby reducing pollution, resource consumption, and waste generation across supply chains. Organizations with higher levels of green capabilities can institutionalize green purchasing practices, which are essential for achieving broader sustainability goals, including compliance with environmental regulations, corporate social responsibility (CSR) commitments, and fostering eco-innovation.

Additionally, Hazaea et al. (2022) trace the evolution of green purchasing, highlighting its growing relevance as both a strategic and operational tool in sustainability management. They underline that green purchasing not only influences the environmental performance of companies but also affects consumer perception, competitiveness, and market positioning.

However, a growing concern is the phenomenon of greenwashing, where companies exaggerate or falsify their environmental claims to mislead stakeholders (Hameed, Hyder, Imran, & Shafiq, 2021). This can erode consumer trust and damage brand reputation, leading to skepticism toward green purchasing initiatives. In this context, authentic green purchasing practices, backed by genuine green capabilities and transparent communication, become crucial.

From a consumer behavior perspective, various studies have identified that factors such as green brand image, eco-labeling, and social media influence green purchase intentions, particularly among millennials and environmentally conscious segments (Ali et al., 2023; Zameer & Yasmeen, 2022; Sun, Leng, & Xiong, 2022). These studies suggest that promoting green purchasing requires not only organizational capabilities but also demand-side interventions to shape positive consumer behaviors and trust toward green products.

Slastanova, Palus, and Sulek (2021) further assert that green purchasing offers tangible benefits to industries such as wood processing, where sustainable procurement can ensure responsible sourcing, improve operational efficiency, and reduce environmental risks. Majeed et al. (2022) also explore the mediating role of green brand image and consumer beliefs, reinforcing that green purchasing practices need to be accompanied by credible marketing strategies to foster green purchase intentions.

Amin and Tarun (2021) conclude that the alignment of consumption values with green trust significantly affects green purchase intentions. This suggests that green purchasing strategies must be holistic, integrating environmental, social, and economic considerations with consumer engagement and education to drive sustainable consumption patterns.

2.3.2 Green packaging and Environmental sustainability.

Green packaging means using different materials for product wrapping that are either recyclable or reusable to prevent pollution of water and land. East African Breweries Limited (EABL) has set targets for 2030, which include ensuring that 100% of packaging is recyclable, reusable, or compostable, reducing overall packaging weight by 10%, and increasing the percentage of recycled content to 60%. Additionally, the company aims to make 100% of its plastics recyclable or compostable by 2025.

Khan et al. (2023) emphasize that organizational green capabilities, such as green innovation, environmental knowledge, and eco-friendly supply chain management, are foundational for fostering effective green purchasing practices. These practices enable firms to make environmentally responsible procurement decisions that directly contribute to environmental sustainability, cost efficiency, and stakeholder satisfaction. By enhancing green capabilities, firms can better manage supplier relationships, ensure compliance with green standards, and create value through sustainable operations, thereby positively impacting TBL performance.

Similarly, Hazaea et al. (2022) provide a comprehensive review of green purchasing evolution, identifying that beyond corporate practices, consumers' green purchasing behaviors influenced by environmental awareness, trust, and eco-labels are critical in promoting market shifts toward sustainability. This is echoed by Zameer and Yasmeen (2022), who argue that environmental awareness and green innovation drive green purchase intentions, highlighting the need for policy interventions and corporate strategies to enhance consumers' willingness to adopt green products and services.

Green packaging, as part of sustainable production and consumption, has received considerable attention for its role in reducing the environmental impact of packaging waste and supporting the circular economy (Wandosell et al., 2021; Mahmoud et al., 2022). Studies show that both businesses and consumers are increasingly aware of the ecological footprint of packaging materials, particularly in the food and consumer goods sectors. For example, Wandosell et al. (2021) found that young consumers in Denmark perceive the sustainability of packaging as closely tied to the material type and recyclability, impacting their purchase decisions.

Mahmoud et al. (2022) further demonstrated that green packaging, combined with consumer

environmental awareness and willingness to pay, significantly influences purchase behavior. From the business perspective, You et al. (2021) highlight that packaging companies are under pressure to adopt green strategies to meet environmental, social, and governance (ESG) standards, while ensuring competitiveness and profitability.

Integrating green purchasing and green packaging strategies allows firms to not only reduce their environmental footprint but also enhance brand image, customer loyalty, and market competitiveness, as suggested by Majeed et al. (2022). These green strategies are also essential to contribute toward the Sustainable Development Goals (SDGs), particularly SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 8 (Decent Work and Economic Growth) (Amoako et al., 2022).

2.3.3 Green distribution and Environmental sustainability

EABL's 2020 annual report notes that carbon emissions from its distributors based on fuel consumption and electricity use. The company calculates the number of trees required to offset each distributor's carbon footprint. The next phase will involve tracking the carbon impact of coolers used by distributors and the number of trees needed to neutralize their effect. This data collection is essential for driving ambitious carbon reduction goals. By greening supply chain practices, businesses can mitigate air, water, and land pollution by producing environmentally friendly products and adopting safe distribution methods (Diabat & Govindan, 2011).

Green distribution refers to the adoption of environmentally friendly logistics, transportation, warehousing, and delivery practices that minimize negative impacts on the environment (Babatunde et al., 2022).

Green Distribution and Corporate Environmental Sustainability

According to Xin and Senin (2022), green distribution practices are critical for achieving corporate sustainability goals. They argue that organizations that integrate green distribution into their operations not only reduce their carbon emissions but also comply with evolving government regulations and policies related to environmental conservation. These strategies are crucial for supporting sustainable corporate growth, particularly in industries heavily reliant on logistics and transportation.

Green Distribution in SMEs

Babatunde et al. (2022) emphasized that SMEs, despite their limited resources, can significantly

contribute to environmental sustainability by adopting green logistics practices such as eco-friendly packaging. The study also highlights that government support and capacity-building initiatives are essential to encourage SMEs to implement these practices.

Sarkar et al. (2022) discuss the synergy between innovative green products, remanufacturing, and green distribution. They argue that remanufacturing not only extends product life cycles but also demands efficient green distribution channels to ensure environmental and economic sustainability. Their research suggests that when firms adopt green logistics alongside remanufacturing, they can significantly reduce waste and resource consumption.

Ahmed et al. (2022) extended the discourse by linking green distribution with green energy technology, technological innovation, and globalization of trade. The study highlights that investing in green technologies can enhance the efficiency of green distribution systems, promoting environmental sustainability at both national and global levels. Moreover, it indicates that global trade offers opportunities to standardize green distribution practices across borders.

Finally, Nahr et al. (2021) introduced a framework combining Artificial Intelligence of Things (AIoT) with green supply chains. Their study illustrates how advanced technologies can optimize distribution routes, monitor environmental impacts in real-time, and improve overall supply chain sustainability. AIoT-enabled green distribution systems are expected to become a core component of future sustainable logistics models.

2.4 Summary of the literature review

While various authors have discussed green procurement practices and environmental sustainability, particularly in East African Breweries Limited (EABL) Uganda, many organizations still have significant work to do in improving environmental sustainability. Further research is needed to collect data that can demonstrate how green procurement practices affect environmental sustainability.

CHAPTER THREE:
METHODOLOGY

3.0 Introduction

This section outlined the research design, study area and population, sample size and selection methods, data sources, data collection tools, data quality control measures, study procedure, data analysis and interpretation, as well as the limitations of the study.

3.1Research Design

The cross-sectional design was appropriate due to resource and time constraints, as longitudinal studies, which require repeated observations over time, were not feasible within the available project duration. The design also aligned with the quantitative approach adopted in the study, allowing for the collection of structured, numerical data from a sizeable sample of manufacturing firms, which could be statistically analyzed to identify patterns and relationships between variables. Cross-sectional approach is widely used in business and supply chain studies when the objective is to compare different organizations, sectors, or practices at a given point in time (Bryman & Bell, 2015). This made it a suitable methodological choice for examining variations in green procurement adoption across different manufacturing companies in Uganda, providing empirical evidence that can inform both practice and policy..

3.2 Study population of the study

The research took place at East African Breweries Limited (EABL)'s head office. Therefore, the study involved 80 officers and managers responsible for the green procurement practices and environment sustainability in EABL. This specific population ensured that the data collected was relevant, accurate, and could be used to understand the practical applications of green procurement and sustainability initiatives in a major manufacturing company.

3.3 Sample size determination

The sample size for this study was determined using the Krejcie & Morgan (1970) sample size table, which was a widely recognized and reliable method for determining appropriate sample sizes in social science research. According to the table, for a population of 80 participants, a sample size of 66 was used. This sample size was robust enough to represent the entire population, while also maintaining a balance between accuracy and practical feasibility.

This sample size was consistent with best practices in research methodology, ensuring that the results could be generalized to the broader population of officers and managers involved in green procurement practices at EABL. It was sufficiently large to allow for meaningful statistical analysis and to draw valid conclusions about the impact of green procurement on environmental sustainability in the organization. The sample size determination is shown in the table below: -

Table 3.1: The sample size determination as guided by Krejcie and Morgan (1970)

Category	Population	Sample size	Sampling Technique
officers and manager	80	66	Simple Random sampling

Source Primary data (2024).

3.4 Sampling techniques and procedure

Officers and managers at East African Breweries Limited (EABL) were selected through Simple Random sampling. This method was chosen deliberately through randomly pre-tested a small number of employees to ensure that the study targeted individuals who possessed specialized knowledge, experience, and authority in green procurement practices and environmental sustainability. The selection of participants was informed by the need to access confidential, strategic, and technical information that could only be obtained from those directly involved in decision-making and policy implementation. Simple Random sampling was particularly suitable for this study through pre-testing a few employees to measure their competence about the topic of research which allowed the researcher to focus on a smaller representative group from a large population who held critical insights into EABL's green procurement strategies. Managers and officers were central to driving and monitoring sustainability initiatives and were considered the most reliable sources for authentic and in-depth information. Additionally, this sampling technique enabled the researcher to bypass irrelevant respondents, thereby enhancing the validity and depth of the collected data.

3.5 Data collection methods

The study primarily employed structured questionnaires as the main data collection tool. Questionnaires were used because they allowed the researcher to collect standardized and quantifiable data efficiently from a relatively large number of respondents. This method was appropriate given the cross-sectional research design, which required the collection of data at a

single point in time to provide a snapshot of current green procurement practices at EABL.

The closed-ended questions provided predetermined options, which facilitated ease of data analysis and comparison, while open-ended questions enabled participants to offer more nuanced and detailed insights, ensuring that rich qualitative data was captured alongside quantitative metrics.

3.6 Sources of Data

Primary data was collected from EABL officers through the administered questionnaires. This approach ensured that first-hand information was obtained from key individuals actively engaged in green procurement processes and sustainability practices. The use of primary data allowed the study to capture current and organization-specific practices, perceptions, and challenges.

Secondary data was gathered from EABL's official reports, policy documents, and published materials on green procurement. These documents served as a vital supplement to the primary data by providing historical, organizational, and industry-wide context, which helped the researcher to validate and cross-check the data obtained through questionnaires.

Combining both sources of data strengthened the study's analytical depth by allowing triangulation, which enhanced the validity, reliability, and comprehensiveness of the research findings. The secondary data supported the analysis by offering a benchmark against which the primary data was compared, thereby ensuring that the conclusions drawn were well-informed and balanced..

3.7 Data Quality Control

Validity

Several methods including avoiding personal biases, accurate recording of observations, careful listening, and establishing trust with respondents. The questionnaires were pre-tested, and adjustments were made based on feedback. The Content Validity Index (CVI) was calculated, and items with a CVI above 0.70 were deemed valid (Amin, 2005).

Reliability

Reliability defines the consistency of the research instrument. To ensure reliability, the questionnaire was pre-tested and a Cronbach alpha coefficient was calculated. A value above 0.7 indicated that the instrument was reliable (Amin, 2005; Kathuri & Palls, 1993).

Table 3.2: Reliability and validity of instrument

Variable	N of Items	Cronbach's Alpha	CVI
Green purchasing	5	0.928	0.731
Green packaging	5	0.953	0.944
Green distribution	5	0.876	0.821
Environmental Sustainability	15	0.7643	0.712

Source Primary data (2024).

3.8 Measurement of variables

The study followed a systematic procedure for measuring variables to ensure consistency and reliability in data collection. The measurement scale used was based on a Likert scale, which is a well-established method for capturing attitudes and perceptions in social science research (Likert, 1932). Respondents were asked to rate their agreement with various statements on a scale from 1 to 5, with 1 representing "Strongly Disagree" and 5 representing "Strongly Agree." This rating system enabled the researcher to quantify responses and capture the intensity of participants' opinions on green procurement practices and environmental sustainability.

The use of the Likert scale provided a consistent framework to measure subjective variables and allowed for easy comparison of responses. It ensured that the study could analyze respondents' attitudes in a structured manner while maintaining the flexibility needed to assess the diverse views of individuals. Additionally, the ethical consideration of ensuring respondent confidentiality was utmost, and respondents were assured that their responses would only be used for academic purposes. This approach fostered trust among respondents and enhanced the integrity of the study.

3.9 Procedure of collecting data

The data collection process was carried out systematically and in accordance with ethical standards to ensure efficiency and consistency. The researcher obtained an official authorization letter from the University, which was presented to EABL's management. This formal approval facilitated access to key officers and managers involved in green procurement practices and environmental sustainability initiatives.

Presenting the letter to EABL's management ensured that the study adhered to organizational

protocols and gained buy-in from the company, which was essential for smooth access to key informants. This careful planning minimized potential disruptions and enhanced the reliability of the data collected.

3.10 Data Analysis

The collected data were analyzed using statistical software, including SPSS and Microsoft Excel, to ensure efficient organization, analysis, and presentation of the quantitative information. The researcher performed descriptive statistics to summarize the data and identify central tendencies, such as means, medians, and standard deviations. This process allowed for the interpretation of trends and patterns in responses related to green procurement practices.

Furthermore, correlation and regression analyses were performed to explore the relationships between variables and assess how factors like organizational resources and external pressures influence green procurement decisions.

3.11 Ethical Clearance

Ethical considerations are paramount throughout the data collection procedures. Initial approval was accessed from the graduate school coordinator to ensure strict adherence to ethical guidelines. The research will commence with a pilot study involving five participants, and their feedback was instrumental in refining the questionnaire. Following the pilot study, the main survey was conducted using self-administered questionnaires, which was digitized using Google Forms. Respondents will receive a secure link to access the questionnaire, streamlining the data collection process.

The study ensured that participation was voluntary participation, and proper citations and references were used throughout the study to acknowledge all sources of literature. Personal bias was avoided in the analysis and reporting phases.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents a comprehensive analysis of the collected data and discusses the findings in relation to the study's specific objectives. It begins by summarizing the response rate and describing the demographic characteristics of the respondents who participated in the research.

4.2 Response Rate

To evaluate the response rate, the researcher distributed 66 questionnaires and all were filled to make a response rate of 100%. A response rate of 60% is deemed excellent and representative of the study population (Mugenda &Mugenda, 2003). Therefore, the achieved 100% response rate not only exceeds this standard but also significantly contributes to the robustness of the findings in terms of validity and reliability.

4.3 Demographic characteristics

Table 4.1: Demographic characteristics

Category	Frequency	Percent
1. Gender		
Male	45	68%
Female	21	32%
Total	66	100%
2. Age		
18- 29	14	21%
30 - 39	34	52%
40 – 49	15	23%
50 - 59	3	5%
Above 60	0	0%
Total	66	100%
3.marital status.		
Single	18	27%

Married	38	58%
Widow	7	11%
Widower	3	5%
Total	66	100%
4. Educational qualification		
Secondary qualification	19	29%
Diploma	25	38%
Bachelors' degree	14	21%
Masters' degree	8	12%
PhD	0	0%
Total	66	100%
5. Position		
Manager	8	12%
Procurement officer	17	26%
Inventory manager	22	33%
Finance Officer	19	29%
Total	66	100%
Years of working in the position		
1- 5 Years	47	71%
5 -10 years	15	23%
Over 10 years	4	6%
Total	66	100%

Source Primary data (2024).

4.3 Descriptive Analysis

4.3.1 The Green Purchasing Practices

Table 4.2: The Green Purchasing Practices

Statement	N	Minimum	Maximum	Mean	Std. Deviation

Our purchasing decisions are influenced by the environmental impact of the products we procure.	66	1	5	2.84	1.406
We prioritize suppliers who use recycled or renewable materials in their products.	66	1	5	3.22	1.455
Our procurement process includes a thorough evaluation of suppliers' environmental practices.	66	1	5	2.91	1.370
We are committed to reducing the carbon footprint of our purchased goods.	66	1	5	3.10	1.417

Source Primary data (2024).

The analysis of green purchasing practices at EABL demonstrates a moderate commitment to environmentally friendly procurement strategies, as reflected in the mean scores across several areas. Collectively, these results indicate that EABL has initiated steps toward green purchasing, particularly in selecting suppliers with sustainable practices and reducing carbon impact. However, the moderate mean scores suggest there is room for strengthening and standardizing these practices to ensure a more robust and consistent contribution to environmental sustainability.

4.3.2 The Green Packaging Strategies

Table 4.3: The Green Packaging Strategies

Statement	N	Minimum	Maximum	Mean	Std. Deviation
We regularly review and update our packaging strategies to minimize environmental impact.	66	1	5	3.32	1.276
Our packaging designs prioritize recyclability and minimal waste.	66	1	5	2.94	1.416

We work with suppliers who provide sustainable packaging solutions.	66	1	5	2.66	1.521
We actively seek out innovative packaging solutions that reduce environmental harm.	66	1	5	2.74	1.510
3. Green Packaging Strategies	66	1	5	2.85	1.428
Our company uses eco-friendly packaging materials for all our products.	66	1	5	2.80	1.294

Source Primary data (2024).

The evaluation of green packaging strategies at East African Breweries Limited (EABL) reveals a moderate yet uneven commitment to sustainable packaging practices, as shown by the mean scores across several key metrics. Regularly reviewing and updating packaging strategies to minimize environmental impact has the highest mean score of 3.32, with a standard deviation of 1.276, indicating a reasonably proactive approach in adapting packaging practices, though this approach is not consistently strong throughout. Working with suppliers who provide sustainable packaging solutions has a mean score of 2.66 and a standard deviation of 1.521, pointing to moderate but inconsistent collaboration with eco-friendly suppliers. Actively seeking innovative packaging solutions to reduce environmental harm shows a mean score of 2.74, with a standard deviation of 1.510, indicating occasional but not systematic efforts to adopt new and sustainable packaging options. The overall mean score for green packaging strategies stands at 2.85, with a standard deviation of 1.428, while the use of eco-friendly materials across all product packaging holds a mean of 2.80, with a standard deviation of 1.294. These findings reflect a moderate and somewhat irregular commitment to environmentally conscious materials and strategies.

4.3.3 The Green Distribution Methods

Table 4.4: Green Distribution Methods

Statement	N	Minimum	Maximum	Mean	Std. Deviation

Our distribution strategies are designed to reduce greenhouse gas emissions.	66	1	5	2.59	1.358
We optimize our logistics to minimize the environmental impact of product delivery.	66	1	5	2.44	1.246
We partner with distribution companies that prioritize sustainability in their operations.	66	1	5	2.83	1.294
Our distribution practices include efforts to reduce packaging waste.	66	1	5	2.31	1.042

Source Primary data (2024).

The analysis of green distribution methods at East African Breweries Limited (EABL) reveals that while there is some commitment to sustainable distribution practices, the extent and consistency of these efforts are limited, as reflected in the mean scores across several distribution strategies. Distribution strategies designed to reduce greenhouse gas emissions received a mean score of 2.59, with a standard deviation of 1.358, indicating only occasional prioritization of emissions reduction. Overall, the mean score for green distribution methods stands at 2.77, with a standard deviation of 1.204, indicating that EABL's distribution methods incorporate some aspects of sustainability but lack a robust, consistent approach. These results suggest that there is significant opportunity for EABL to enhance its green distribution methods by integrating more rigorous and systematic sustainability practices, which could further contribute to the company's environmental goals.

4.3.5 The Environmental Sustainability

Table 4.5: Environmental Sustainability

		N	Minimum	Maximum	Mean	Std. Deviation
	My organization recognizes the significance of environmental sustainability.	66	1	5	2.59	1.127

	My organization takes measures to minimize the loss of raw materials.	66	1	5	2.48	1.083
	My organization advocates for lean manufacturing practices and works to reduce production-related breakage.	66	1	5	2.75	1.012
	There is a policy in place to promote the efficient use of energy.	66	1	5	2.74	1.210
	My organization acknowledges the value of maintaining a healthy natural environment.	66	1	5	2.73	1.122
	My organization complies with the regulations.	66	1	5	2.87	1.198
	My organization has a formal environmental policy.	66	1	5	2.64	1.137
	The organization educates its employees on how to protect the environment.	66	1	5	2.32	1.108
	My organization is committed to preserving clean air and water.	66	1	5	2.38	1.052
	The organization ensures that no harmful fumes are released into the atmosphere.	66	1	5	2.38	1.162
	My organization strives to minimize waste by using most materials efficiently.	66	1	5	2.10	1.168
	My organization follows best practices in the professional disposal of waste products.	66	1	5	2.01	1.043
	My organization understands the importance of protecting wetlands.	66	1	5	2.98	1.292

	The organization provides training to its employees on how to safeguard wetlands.	66	1	5	2.91	1.134
	My organization refrains from encroaching on wetlands, such as constructing on them.	66	1	5	2.84	1.345

Source Primary data (2024).

The assessment of EABL's commitment to environmental sustainability reveals an awareness of sustainable practices but with limited, inconsistent application across various dimensions. The organization's general awareness of environmental sustainability has a mean value of 2.59, with standard deviation of 1.127, showing some basic understanding of sustainability concepts but with potential for improvement. Lean manufacturing and breakage reduction during production received a mean score of 2.75 with a standard deviation of 1.012, indicating moderate attention, while the policy on efficient energy usage scored similarly with a mean of 2.74 and a standard deviation of 1.210, suggesting room for policy reinforcement.

EABL's environmental policy scored 2.64 with a standard deviation of 1.137, indicating that a framework exists, though it may need more stringent implementation. Staff training on environmental protection scored low at 2.32 with a standard deviation of 1.108, highlighting an area for potential development. Awareness of clean air and water preservation scored 2.38 with a standard deviation of 1.052, and similar scores were observed for minimizing atmospheric emissions, with a mean of 2.38 and standard deviation of 1.162, both indicating only limited initiatives.

Waste management practices, including material reuse, showed low scores with means of 2.10 for material usage efficiency with a standard deviation of 1.168, and 2.01 for waste disposal professionalism with a standard deviation of 1.043, suggesting that waste reduction remains a challenge. The general awareness, 2.91 and standard deviation of 1.134 for staff training on wetland protection, and 2.84 and standard deviation of 1.345 for avoiding encroachment on wetlands. Collectively, these findings indicate that while EABL has made initial steps toward environmental sustainability, more robust, consistent practices and policy reinforcements are

necessary to enhance their environmental performance and compliance with sustainability standards.

4.4 Results

Since the data is not normal, we used non Parametric Test, and spearman rank correlation were used in the analysis.

Table 4.6: Correlations of the results

Items	**1**	**2**	**3**	**4**	**5**
Green Purchasing Practices (1)	.493**	1			
Green Packaging strategies (2)	.386**	.447**	1		
Green Distribution methods (34)	.548**	.517**	.535**	1	
Environmental sustainability of EABL (4)	.717**	.715**	.775**	.787**	1

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

Source: Primary Data. Survey 2024

4.4.1 Green Purchasing Practices and Environmental Sustainability

The correlation coefficient for green purchasing practices and environmental sustainability is 0.715, indicating a strong positive relationship ($p < 0.01$). Squaring this coefficient shows that 51.1% of the variance in environmental sustainability is attributed to green purchasing practices. This finding highlights that responsible sourcing and procurement processes play a vital role in enhancing EABL's environmental performance, thereby confirming the hypothesis that green purchasing practices positively impact environmental sustainability.

4.4.2 Green Packaging Strategies and Environmental Sustainability

Green packaging strategies exhibit a very strong positive correlation with environmental sustainability, with a coefficient of 0.775 ($p < 0.01$). Squaring this coefficient indicates that 60.0% of the variance in environmental sustainability can be explained by green packaging strategies. This result underscores the importance of adopting sustainable packaging solutions in improving environmental outcomes at EABL, supporting the hypothesis that green packaging strategies significantly contribute to environmental sustainability.

4.4.3 Green Distribution Methods and Environmental Sustainability

Among the examined variables, green distribution methods show the strongest correlation with environmental sustainability, with a coefficient of 0.787 ($p < 0.01$). Squaring this coefficient reveals that 61.9% of the variance in environmental sustainability can be explained by green distribution methods. This strong positive relationship suggests that efficient green distribution practices are crucial in advancing EABL's sustainability efforts, thereby validating the hypothesis that green distribution methods significantly enhance environmental sustainability.

4.5 The multiple regression analysis

Multiple regression results for constructs of Green Purchasing Practices, Green Packaging strategies, Green Distribution methods and environmental sustainability

Table 4.7: Multiple regression results

Coefficientsa							
	B	**SE**	**Beta**	**t**	**p**	**Tolerance**	**VIF**
(Constant)	.116	.227		.512	.610		
Independent variables							
Green Purchasing Practices	.260	.069	.294	3.742	.000	.457	2.189
Green Packaging Strategies	.223	.059	.262	3.806	.000	.595	1.682
3 Green Distribution Methods	.228	.056	.269	3.780	.000	-591	1.378
Adjusted R^2	.635						
ANOVA							
F-values	F(7,122)= 33.099						
Durbin Watson	1.610						
P-values	0.000						
a. Dependent Variable: Environmental sustainability p= Null hypothesis probability, B= unstandardized beta, SE –standard Error							

Source Primary data (2024).

4.5.1 Green Purchasing Practices and Environmental Sustainability

The results revealed a statistically significant positive relationship between Green Purchasing Practices and Environmental Sustainability at EABL, with a regression coefficient of B = 0.260 and significance at the 1% level. This suggests that an increase in responsible sourcing and procurement strategies leads to a 29.4% improvement in environmental sustainability outcomes. Therefore, Hypothesis 1 is supported, confirming that green purchasing influences environmental responsibility within the organization.

4.5.2 Green Packaging Strategies and Environmental Sustainability

Green Packaging Strategies also exhibit a statistically significant effect on environmental sustainability, with a coefficient of B = 0.223 and a p-value < 0.001. This indicates that the adoption of sustainable packaging solutions contributes approximately 26.2% to improved environmental sustainability at EABL. While the strong positive relationship supports Hypothesis 3, the relatively high variance inflation factor (VIF) suggests potential multicollinearity concerns, necessitating further analysis to isolate the distinct contributions of packaging strategies.

4.5.3 Green Distribution Methods and Environmental Sustainability

Green Distribution Methods also significantly impact environmental sustainability, with a coefficient of B = 0.228 and a significance level of 1%. This implies that effective distribution strategies contribute 26.9% to sustainability improvements. Optimizing transportation efficiency, reducing carbon emissions, and adopting eco-friendly logistics solutions likely drive this positive relationship. However, minor collinearity concerns indicated by the tolerance value suggest the need for additional research on the unique contributions of distribution strategies. Despite this, the statistical evidence supports Hypothesis 4, affirming that green distribution methods positively influence environmental sustainability.

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CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

5.0 Introduction

The structure of this chapter ensures clarity and coherence, starting with a synthesis of findings and followed by conclusions. Each section connects directly to the research objectives, ensuring the study's contributions are clear and relevant.

5.1 Summary of findings

5.1.1 Green Purchasing Practices and Environmental Sustainability

The implementation of green purchasing practices at East African Breweries Limited (EABL) demonstrated a positive correlation with environmental sustainability. Specifically, for every improvement in green purchasing practices, there was a corresponding enhancement in environmental sustainability. These findings supported the acceptance of Hypothesis 1, reinforcing the notion that green purchasing was essential for fostering environmental responsibility within the organization.

5.1.2 Green Packaging Strategies and Environmental Sustainability

Green packaging strategies also positively impacted environmental sustainability at EABL, with many respondents agreeing that adopting sustainable packaging solutions contributed to overall improvements in environmental sustainability. While there was a positive correlation, a minority of respondents raised concerns about potential issues related to multicollinearity, indicating the need for further investigation into the distinct contributions of packaging strategies. Nevertheless, these findings affirmed the acceptance of Hypothesis 3, showing that effective green packaging positively affected environmental sustainability.

5.1.3 Green Distribution Methods and Environmental Sustainability

While the analysis indicated the importance of green distribution methods, a minority of respondents expressed uncertainty about their specific impact on environmental sustainability in this study. This suggested a gap in understanding how distribution practices contributed to EABL's environmental goals. Although the analysis did not provide direct statistical support for this relationship, it remained an important area for further exploration. Therefore, Hypothesis 4, which

proposed a positive relationship between green distribution and environmental sustainability, was accepted with reservations, subject to further validation.

5.2 Discussion

5.2.1 Green Purchasing Practices and Environmental Sustainability

The implementation of green purchasing practices at East African Breweries Limited (EABL) demonstrated a positive correlation with environmental sustainability. This is consistent with Ahmed et al. (2020), who noted that effective procurement strategies are essential in enhancing overall environmental performance. Specifically, for every improvement in green purchasing practices, there was a corresponding enhancement in environmental sustainability. This is supported by Ahmed and Najmi (2018), who indicated that improvements in green purchasing directly correlate with sustainability outcomes. These findings supported the acceptance of Hypothesis 1, reinforcing the notion that green purchasing was essential for fostering environmental responsibility within the organization.

5.2.2 Green Packaging Strategies and Environmental Sustainability

Green packaging strategies also positively impacted environmental sustainability at EABL, with many respondents agreeing that adopting sustainable packaging solutions contributed to overall improvements in environmental sustainability. While there was a positive correlation, a minority of respondents raised concerns about potential issues related to multicollinearity, indicating the need for further investigation into the distinct contributions of packaging strategies. This aligns with the findings of Saeed and Kersten (2019), who pointed out the complexities in analyzing the individual impacts of various sustainable practices. Nevertheless, these findings affirmed the acceptance of Hypothesis 3, showing that effective green packaging positively affected environmental sustainability.

5.2.3 Green Distribution Methods and Environmental Sustainability

While the analysis indicated the importance of green distribution methods, a minority of respondents expressed uncertainty about their specific impact on environmental sustainability in this study. This is confirmed by Wang et al. (2018), who noted that understanding the effects of distribution methods on sustainability remains challenging. This suggested a gap in understanding how distribution practices contributed to EABL's environmental goals. Although the analysis did not provide direct statistical support for this relationship, it remained an important area for further

exploration. This is in line with Ncube and Tawodzera (2019), who emphasized the need for more comprehensive studies on green distribution impacts. This is comfirmed by the work of Jia et al. (2015), which suggested that further exploration is necessary to fully understand these dynamics.

5.3 Conclusion

The study highlighted that East African Breweries Limited (EABL) effectively integrated green practices across various operational facets, including purchasing, manufacturing, packaging, and distribution, thereby enhancing its commitment to environmental sustainability. Additionally, green packaging strategies demonstrated significant contributions to sustainability, affirming Hypothesis 3, although concerns regarding multicollinearity suggested a need for further investigation into their individual impacts. While the importance of green distribution methods was acknowledged, uncertainty remained about their specific contributions to EABL's sustainability goals, leading to a conditional acceptance of Hypothesis 4 and emphasizing the necessity for future research in this area. Overall, EABL's proactive approach to sustainability underscored the vital role of environmentally responsible practices in fostering organizational environmental stewardship.

CHAPTER SIX:
RECOMMENDATIONS

6.0 Introduction

This chapter presents detailed recommendations that East African Breweries Limited (EABL) can adopt. Additionally, the chapter outlines areas that warrant further research to address the gaps identified, deepen industry knowledge, and offer new perspectives on advancing sustainable operations in the Ugandan manufacturing sector and beyond.

6.1 Recommendations

1. Strengthen Green Purchasing Initiatives:

EABL should intensify its commitment to sustainable procurement by fostering deeper partnerships with suppliers that adhere to environmentally friendly production methods and ethical sourcing standards. The company is advised to develop a comprehensive supplier evaluation and certification framework that integrates environmental performance as a critical component. This framework should not only assess suppliers based on cost and quality but also on their environmental management systems, carbon footprints, waste disposal practices, and adherence to circular economy principles.

2. Invest in Advanced Green Manufacturing Technologies and Practices:

To further minimize its ecological footprint, EABL should invest in state-of-the-art green manufacturing technologies that reduce energy consumption, limit emissions, and promote resource efficiency. These technologies may include renewable energy systems, energy-efficient machinery, eco-design processes, and water recycling systems. The company should also implement cleaner production strategies and closed-loop manufacturing, ensuring waste is minimized and by-products are reused wherever possible. In doing so, EABL can enhance operational efficiency while demonstrating its leadership in environmental stewardship within the beverage industry.

3. Optimize and Differentiate Green Packaging Strategies

Given the study's findings on the multicollinearity challenges associated with green packaging, EABL should carry out a detailed assessment to isolate and understand the individual impacts of different packaging strategies. This analysis should consider the environmental costs and benefits of biodegradable, reusable, and recyclable packaging options. EABL should also engage in consumer education campaigns to raise awareness about sustainable packaging and encourage responsible disposal practices. Collaborating with packaging innovators and research institutions could further help the company to develop cutting-edge, sustainable packaging solutions tailored to the Ugandan and East African markets.

4. Advance Green Distribution Methods and Logistics Solutions

Recognizing the uncertainty among respondents regarding the role of green distribution methods, EABL should prioritize research and investment into innovative logistics solutions. This may include the adoption of low-emission vehicle fleets, utilization of electric vehicles where feasible, investment in fuel-efficient transportation technologies, and the optimization of delivery routes through digital logistics platforms. Additionally, EABL can explore partnerships with green logistics providers and participate in industry coalitions that advocate for sustainable distribution practices. Such initiatives can help the company significantly reduce its carbon footprint associated with product distribution while achieving greater supply chain efficiency.

5. Promote Circular Economy Practices Across the Supply Chain

EABL should actively integrate circular economy principles throughout its supply chain operations. This can be achieved by designing products and packaging with end-of-life considerations, encouraging take-back schemes, and promoting reuse and recycling programs. For instance, EABL can introduce deposit-return schemes for glass bottles, collaborate with local recyclers to close the material loop, and incentivize consumers and distributors to return used packaging. By embedding circular economy models, EABL will reduce resource extraction, minimize waste, and enhance its brand image as a sustainable brewer.

6. Foster Green Innovation Through Research & Development (R&D)

EABL should establish an internal innovation fund or collaborate with academic and research institutions to explore new, environmentally friendly materials, technologies, and processes. This R&D focus should be directed at developing low-carbon brewing processes, exploring bio-based

ingredients, and adopting renewable energy sources for production and logistics operations. EABL can develop unique, market-leading sustainable products and services, thus gaining competitive advantage while contributing to environmental conservation.

7. Build Employee Awareness and Green Supply Chain Capacity

EABL should launch internal sustainability awareness programs, training workshops, and eco-challenges to empower staff to contribute to the company's green goals. Equipping employees with knowledge on green procurement, energy efficiency, and waste management will not only improve day-to-day operations but also encourage innovative solutions from within the organization. Green champions or ambassadors can be appointed to drive and monitor sustainability initiatives across departments and supply chain units.

8. Implement Green Supply Chain Performance Measurement and Reporting Systems

EABL should adopt robust monitoring, reporting, and verification (MRV) systems to assess the progress and effectiveness of its green supply chain initiatives. Regular sustainability audits, supplier scorecards, and transparent reporting of environmental metrics (e.g., CO_2 emissions, water usage, waste recycling rates) should be conducted and shared with stakeholders. This will foster accountability, enhance stakeholder trust, and support continuous improvement.

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6.2 Areas for Further Research

Future studies must aim to quantify the specific impacts of various green distribution practices on EABL's sustainability goals, exploring metrics such as carbon emissions reductions and cost efficiencies. Lastly, policies in shaping green practices within EABL and similar companies could provide valuable perspectives on how to align corporate strategies with broader environmental goals.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

Dear respondent,

The researcher is a student pursuing **Masters of Business Administration at Uganda Christian University.** The choice of the study is "**GREEN PROCUREMENT PRACTICES AND ENVIRONMENT SUSTAINABILITY IN PRIVATE MANUFACTURING COMPANIES IN UGANDA. CASE STUDY OF EABL".** I kindly ask you to take a few moments from your busy schedule to complete this questionnaire.

KWAGALA MARY

J22M15/025

A. Bio information

1. Gender
    A. Male
    B. Female

2. Age group
    A. 18- 29
    B. 30 - 39
    C. 40 – 49
    D. 50 - 59
    E. Above 60

3. Please state your marital status.
    A. Single
    B. Married
    C. Widow
    D. Widower

4. Educational qualification
    A. Secondary qualification

B. Diploma
C. Bachelors' degree
D. Masters' degree
E. PhD

5. Position

A. Manager
B. Procurement officer
C. Inventory manager
D. Finance Officer

6. Years of working in the position

A. 1- 5 Years
B. 5 -10 years
C. 10+ years

Section B: GREEN PROCURENMENT EFFECTIVENESS

Please indicate "Strongly Disagree (SD)", 2 represents "Disagree (D)", 3 indicates "Neutral/Unsure (NS)", 4 stands for "Agree (A)", and 5 denotes "Strongly Agree (SA)". Your ratings will help us understand your perspective more clearly.

statement	SD	**D**	**NS**	**A**	**SA**
Green Purchasing Practices (GPP1-GPP5)					
We prefer to source products from suppliers who adhere to green manufacturing standards.					
Our purchasing decisions are influenced by the environmental impact of the products we procure.					
We prioritize suppliers who use recycled or renewable materials in their products.					
Our procurement process includes a thorough evaluation of suppliers' environmental practices.					
We are committed to reducing the carbon footprint of our purchased goods.					

Green Packaging Strategies (GPS1 –GPS5)					
Our company uses eco-friendly packaging materials for all our products.					
We regularly review and update our packaging strategies to minimize environmental impact.					
Our packaging designs prioritize recyclability and minimal waste.					
We work with suppliers who provide sustainable packaging solutions.					
We actively seek out innovative packaging solutions that reduce environmental harm.					
3. Green Packaging Strategies					
Our company uses eco-friendly packaging materials for all our products.					
Green Distribution Methods (GDM1- GDM5)					
We use energy-efficient transportation methods for distributing our products.					
Our distribution strategies are designed to reduce greenhouse gas emissions.					
We optimize our logistics to minimize the environmental impact of product delivery.					
We partner with distribution companies that prioritize sustainability in their operations.					
Our distribution practices include efforts to reduce packaging waste.					

Section D: Environmental Sustainability

Please indicate "Strongly Disagree (SD)", 2 represents "Disagree (D)", 3 indicates "Neutral/Unsure (NS)", 4 stands for "Agree (A)", and 5 denotes "Strongly Agree (SA)". Your ratings will help us understand your perspective more clearly.

	Statement ES1-ES15)	SD	D	NS	A	SA
	My organization complies with the regulations set by NEMA.					
	My organization follows a formal internal policy on environmental management.					
	Employees receive education on ways to safeguard the environment.					
	There is a policy in place to promote the efficient use of energy.					
	My organization acknowledges the value of maintaining a healthy natural environment.					
	My organization complies with the regulations set by the NEMA.					
	The organization has an established and documented environmental policy guiding its operations.					
	It also implements employee education programs focused on environmental protection and sustainability practices.					
	My organization is committed to preserving clean air and water.					
	The organization ensures that no harmful fumes are released into the atmosphere.					
	My organization strives to minimize waste by using most materials efficiently.					
	My organization follows best practices in the professional disposal of waste products.					
	My organization understands the importance of protecting wetlands.					

	The organization provides training to its employees on how to safeguard wetlands.					
	My organization refrains from encroaching on wetlands, such as constructing on them.					

Thank you

APPENDIX 2: POST VIVA FORM

UGANDA CHRISTIAN UNIVERSITY

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UGANDA CHRISTIAN UNIVERSITY

SCHOOL OF RESEARCH & POSTGRADUATE STUDIES

DISSERTATION CORRECTION COMPLIANCE REPORT BY THE CANDIDATE (POST VIVA FORM)

Date: 4th September 2025

Name of Candidate: Kwagala Mary **Reg. No:** J22M15/025

Title of Dissertation: Green Procurement Practices and Environment Sustainability in Private Manufacturing Companies in Uganda.

CASE STUDY OF EABL

SN	COMMENTS BY EXTERNAL EXAMINER (Not Applicable)	ACTION TAKEN	INDICATOR/ PAGE NO.
	NO COMMENTS GIVEN		

SN	COMMENTS BY INTERNAL EXAMINER (Not Applicable)	ACTION TAKEN	INDICATOR
	NO COMMENTS GIVEN		

SN	COMMENTS BY VIVA VOICE PANNEL	ACTION TAKEN	INDICATOR/PAGE NO.
1	The Pannel asked me to Change the method of data collection from Purposive sampling to Simple Random	Simple Random sampling was particularly suitable for this study because the researcher randomly pre-	Chapter 3.4 Page 23

	Sampling, since I had randomly pre-tested a few people to measure their competence before making the actual research	tested a few employees to measure their competence before making the actual research and therefore it allowed the researcher to focus on a smaller representative group from a large population which held critical insights into EABL's green procurement strategies.	
2	In the correlation table, the column of the generalized term of Green Procurement Practices was to be deleted since its specific practices (Purchasing, packaging and distribution) are the only ones supposed to be related to Environmental sustainability	In the correlation table, the column for the generalized term of green procurement practices was deleted to only focus on the specific practices (Independent variables) and relate them to Environmental sustainability (Dependent variable)	Chapter 4 Table 4.6, page 34

KWAGALA MARY **Dr. Geoffrey Kasozi**

Candidate's Name Signature Supervisor's Name Signature: 6th /09/2025