# SUSTAINABLE SUPPLY CHAIN PRACTICES AND OPERATIONAL EFFICIENCY OF COMMERCIAL BANKS IN KENYA

**BY**

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# DECLARATION

**Student Declaration**

The project is my authentic document and has not been offered for examination credit at any learning institute.

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**D67/22239/2019**

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## SUPERVISOR

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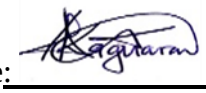
**Signature**:  **Date**: **30TH NOVEMBER, 2023**

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# DEDICATION

To my late parents, Mr. James Kw'oko and Mrs. Jossy Martha. You were my cheer leaders and the best parents. Your voices still speak.

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# ABBREVIATIONS

| | |
|---|---|
| **ATM** | Automated Teller Machines |
| **CBK** | Central Bank of Kenya |
| **GDP** | Gross Domestic Product |
| **KBA** | Kenya Bankers Association |
| **RBV** | Resource Based View |
| **SCM** | Supply Chain Management |
| **SCMP** | Supply Chain Management Practices |
| **SRP** | Socially Responsible Procurement |
| **SSC** | Sustainable Supply Chain |
| **SSCMP** | Sustainable Supply Chain Management Practices |
| **SSCP** | Sustainable Supply Chain Practices |

# ABSTRACT

Becoming more responsible and accountable towards the environment and society is a major problem that businesses of all sizes and industries face. It is widely acknowledged that businesses need to take sustainability into account while running their operations and managing their supply networks. The paper aimed at investigating the impact of sustainable supply chains on operational efficiency of commercial banks in Kenya. The specific objectives were to determine the adoption level of sustainable supply chain practices and to ascertain the association amongst sustainable supply chains and operational efficiency of commercial banks in Kenya. The study adopted descriptive research design and the population was made up of all the 43 licensed commercial banks in Kenya. Primary data was acquired via questionnaires which were administered via Google forms on e-mails. While descriptive statistics was used to examine the adoption level of sustainable supply chain practices, regression analysis was used to determine the association between sustainable supply chains and operational efficiency of Kenyan commercial banks. On the adoption extent of sustainable supply chain practices, the findings indicated that the sustainable procurement, sustainable innovations, corporate social responsibility, sustainable risk management and sustainable financing were moderately adopted. The adoption of sustainable supply chain practices was found to moderately influence cost, quality and timeliness of commercial banks. On establishing the association between sustainable supply chains and operational efficiency of commercial banks in Kenya, a mixed outcome was established. Sustainable procurement, sustainable innovations and sustainable risk management were found to have an association and to influence operational efficiency of commercial banks. Corporate social responsibility and sustainable financing were found to have no relationship and therefore did not influence operational efficiency. Commercial banks are recommended to adopt sustainable procurement, sustainable innovations and sustainable risk management to a large extent as they have been established to influence operational efficiency and yet they have been moderately adopted. The paper was contextually limited as it only covered commercial banks and left out the other banks. Forthcoming studies could explore other factors that influence operational efficiency which were never covered in the research.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Becoming more responsible as well as accountable towards the environment and society is a major problem that businesses of all sizes and industries face. It is widely acknowledged that businesses need to take sustainability into account while running their operations and managing their supply networks as observed by Oubrahim, Sefiani and Happonen (2023). Supply networks need to receive more attention if sustainability is to be extensively adopted and developed (Razzak, 2023). According to Arda, Montabon, Tatoglu, Golgeci and Zaim (2023), sustainability programs used to exclusively focus on ecological issues, but have now shifted to a triple bottom line (ecological, economic and social) strategy. Customers communicate their wants and demands and play a crucial role in market conditions. Particularly, there is a stronger connection between ethical considerations and customer purchasing preferences. In order to address the constantly shifting client demands, firms have adopted a number of techniques, chief among them sustainability practices (AlBrakat, Al-Hawary & Muflih, 2023). This guarantees that all parties' interests are taken into consideration.

Triple Bottom Line (TBL) Theory and Dynamic Capability Theory (DCT) are the theoretical frameworks that will be used in this study. According to Teece et al. (1997), the DCT is centered on modifying current the entity’s internal and outwards core competencies to tackle the constantly altering environment in which organizations operate. According to Elkington (2004), TBL focuses on describing the economic, environmental, and social worth of investments that could result in benefits beyond a

company's financial bottom line. If the Kenyan Commercial Banks are to increase operational effectiveness and achieve a competitive advantage, they must invest in developing their dynamic capabilities.

The market, rather than supply, is now more and more in control of the Kenyan banking system, and new methods of client targeting and access are being developed (Cytonn Investments, 2021). Using tools like agency banking, ATMs, M-banking, which includes using M-Pesa services, and online banking, banks have been able to better understand their clients' requirements and be able to reach out to them in order to close the gap (Melubo & Musau, 2020). According to the Kenya Banking Charter (2021), financial institutions are currently implementing an unprecedented restructuring of the banking industry and the financial services sector is also evolving quickly. According to Yang and Wang (2023), technology, government regulation, and rising client sophistication are prompting financial service organizations to reassess their current business strategies. According to Lawrence and Joy (2023), this is a sign of the financial institutions' management and leadership's ability to sustainably alter the organization while still maintaining operational efficiency.

### 1.1.1 Sustainable Supply Chain Practices

Managing of materials that are raw, the influx of money and information backward and onward as well as partnerships with various supply chain participants may be used to define sustainable supply chain management according to Dev, Shankar and Qaiser (2020). They continue by saying that in doing this, the entities should be attentive on particular attention to the social, ecological, and economic aspects of sustainability. This is carried out in order to gratify the demands of the clients and shareholders. According to

Sahoo and Vijayvargy (2021), SSC is the capacity to satisfy the present generation's needs devoid of essentially negating those of the following one. The Triple Bottom Line, also referred to as the TBL or sustainable core pillars, primarily emphasizes on the social (people), economic (profit) and ecological (planet) aspects of sustainability (Elkington, 2004). According to Vishwakarma, Dangayach, Meena, Gupta and Luthra (2023), sustainability is an all-inclusive approach to technologies, innovativeness and procedures that are tangled in the supply chain and it concentrates not only on the cost but other aspects as well. AlBrakat, Al-Hawary and Muflih (2023) note that environmentally friendly, sustainably produced goods also benefit a company's bottom line.

According to Nayal, Raut, Yadav, Priyadarshinee and Narkhede (2022), social sustainability is concerned with improving employee wages, working conditions, and worker health and safety. According to Wu, Huo, Yu and Zhang (2022), achieving social sustainability depends in large part on ensuring that the community is able to gain access to proper education that they can afford, communal resources are distributed fairly, employees have the right to engage in collective bargaining, and unions are formed to address the needs of employees. Economically sustainable strategies are implemented to ascertain that, despite the firm's involvement in social and environmental practices, it may ultimately benefit or make profit to support the operation of its operations (Fu, Abdul Rahman, Jiang, Abbas & Comite, 2022). This can be accomplished by distributing and allocating the available resources equally. This is done in order to guarantee the said organizations' long-lasting profitability and continuity. Sahoo & Vijayvargy (2021) emphasize that environmental sustainability takes into account topics like solid and toxic waste management, water conservation, energy and land conservation, and resource

usage. According to Huma, Ahmed Siddiqui and Ahmed (2023), this happens when the organization uses procedures to lessen the impact of dangerous goods or emissions to the atmosphere, hence conserving it.

### 1.1.2 Operational Efficiency

Efficiency is a performance concept. Performance management and operational effectiveness are consequently related. High performance is anticipated from a highly efficient entity, and vice versa. Efficiency in operations allows resources that might otherwise be committed to operational problems to be diverted to fresh, worthwhile ideas that improve the firm's outcomes. In comparison to their industry rivals, more efficient organizations are capable of reaching steady and higher yield levels and operational efficiency (Kamarudin, Sufian & Nassir, 2019). Since negative shocks can be more easily absorbed by the banking sector, the stability of the financial system is increased. Better resource management enables managers to repeat patterns of good practices focused toward increasing business value, which increases operational efficiency (Hasan, Shiming, Islam & Hossain, 2020). Operational efficiency is also defined as combining technology, people, and procedures while reducing operating expenses and boosting any firm's production (Lotto, 2019).

Operational efficiency refers to firm’s capacity to avail goods or services to clients in the utmost economical way feasible while upholding the maximum standards for those items, services and support. It is frequently accomplished by streamlining an entity’s basic operations so as to more quickly and economically attend to factors in the market that are always changing. A company must reduce waste and redundancy while maximizing the assets that are most critical to its success and passing on to the most of its people,

technology, and entity's procedures in order to achieve operational efficiency. Due to the minimal internal expenses that emanates from the operations, an entity may boost profit margins to successfully compete in marketplaces with fierce opposition (Vencataya et al., 2016).

Efficiency is the capacity of any institution to use its resources to achieve the maximum level of production at the lowest cost (Mustapha, 2018). Operational efficiency is explained by Hasan et al. (2020) as the degree that the managers can transform input into finished goods and services. By employing the resources at their disposal, recurrent good practice processes have the power to increase a company's worth (Hasan et al., 2020). Currently available literature applies cost effectiveness, profit-based effectiveness, and time-based effectiveness. For instance, Chipeta and Muthinja (2019) chose profit-based efficiency, while Gündodu and Taşkn (2018) and Taiwo and Agwu (2019) adopted resource utilization as the efficiency methods. Lee et al. (2021) adopted cost efficiency. Operational efficiency, according to Liu et al. (2020), is the ability of the company to put aside money and time and it may include timely deliveries and being flexible. Because national payment systems are designed to cut costs and increase efficiency (Central Bank of Kenya, 2021), this study used cost-based measures, resource utilization, and time-based measures of operational efficiency.

### 1.1.3 Commercial Banks in Kenya

The Kenyan Central Bank (CBK) Act, the Companies Act, the Banking Act, and a number of CBK-provided prudential plans all govern the banking industry in Kenya (CBK, 2023). According to Chipeta and Muthinja (2018), banks dominate the Kenyan economy, accounting for around 12% of GDP. Kenya has 43 commercial banks with

licenses and 1 mortgage financing firm, of which thirty-one are owned by locals with thirteen being owned by foreign entities (CBK, 2022). The locally held financial institutions include 27 private commercial banks, 1 mortgage financing institution, 3 banks with considerable government ownership, and 14 state corporations. The top 10 banks out of the 43 banks control 80% of the industry's total assets, leaving the remaining 33 banks with a pitiful 20% market share (CBK, 2021). This demonstrates the dominance of a few group of industry participants as well as the intense competition at the base of the pyramid.

According to Dzombo, Kilika and Maingi (2017), Vision 2030 and its three fundamental tenets of efficiency, stability, and access to finance have served as the foundation for considerable reform attempts in Kenya. According to Ali, Salman, Yaacob, Zaini and Abdullah (2020), commercial banks are anticipated to provide quite reasonably priced banking services, draw in additional clients, and add onto the development of the financial sector by increasing their efficiency. Efficiency in the banking industry is crucial for boosting access to financial services and ensuring its stability as a key factor in increased economic productivity (Luo, Wei, Ling & Huo, 2020). On-site and off-site security is the responsibility of the CBK. These entail checking the monetary records of the institution to see if they adhere to the rules. Because of the CBK's recent regulation and supervision, which resulted in some banks merging, others closing their doors, and yet others being placed in receivership, the banking sector has continually expanded through productivity, inclusivity, and stability (Githuku & Kinyuru, 2018). By 2030, the state’s hopes to have a thriving financial industry that’s competitive.

The banking sector has undergone through changes that has seen banks adopt innovative technology and reexamine regulatory norms (Parlasca, Johnen & Qaim, 2022). Due to this, banks are now implementing sustainability practices into their daily operations (Anggraini, Hamiza, Doktoralina & Anah, 2018). According to Allen, Carletti, Cull, Qian, Senbet and Valenzuela (2002), some banks are adapting and managing their relationships and operations using technology like phones, emails, and even social media. According to Parlasca et al (2023), technology improvements have made some duties more effective and affordable, but they have also presented other difficulties. In order to cut costs and increase efficiency and convenience, banking companies have used technology to create alternative banking channels.

According to Allen et al (2021), commercial banks offer safe keeping services to their customers and make them available when needed. Additionally, they make it easier to move money from one bank or account to another. Banks help with international trade and provide their clients with investment services. They also serve as trustees for their clients and provide financial guidance. Commercial banks play a weighty part in financial intermediation in Kenya due to the dominance of banks in the nation's financial sector (Kiragu, 2017). Melubo and Musau (2020) opine that the banking sector in Kenya is what ties the nation's economy together. For instance, the agricultural and manufacturing industries, which are important economic pillars in Kenya, rely on banks to survive and expand. Over the past decade, Kenya's banking division has performed better, according to Abubakar & Aduda (2017). This can be attributed to the numerous financial and regulatory reforms that have altered the sector's structure and encouraged banks that are foreign to set up shop and grow economically in the nation.

## 1.2 Research Problem

Kenya's commercial banks are undergoing a significant makeover to adapt to the volatile and ever-changing business climate. The recent interest rate cap regulation, rising domestic and international competition, the economic slump, quickly shifting market trends, and the erratic financial markets have all increased the pressure on banks to develop viable business plans. In addition, the most recent global financial crisis exposed numerous governance flaws and conflicts of interest at financial institutions, including shortcomings in the exercise of asset owners' and managers' ownership responsibilities, which pose a threat to the industry (Kenya Bankers Association (KBA), 2021). Additionally, there are increasingly strict local and international regulations on the financing of terrorism and money laundering that local banks are finding difficult to implement. Inability to match customer expectations, growing competition from financial technology businesses, and mobile banking are all issues that put strain on banks. The way traditional banking has been conducted has generally been disrupted by this. Banks must swiftly adapt to the new developments, which necessitates the adoption of sustainable solutions to enhance their effectiveness.

The amount of money made from non-interest incomes significantly decreased as telecommunication companies entered the financial services industry. According to Githuku and Kinyuru (2018), the telecommunications firms launched money transfer services such Airtel Money from Airtel Company, M-Pesa from Safaricom Company, and Tel-Cash from Telkom Kenya. Banks needed to think strategically about how to provide practical and affordable solutions if they were to withstand this pressure and continue to be relevant in their industry. For instance, the banks had to focus on internal efficiency

and develop more affordable alternative distribution methods, including automated teller machines and debit cards (Melubo & Musau, 2020).

In order to improve services and cut costs, banks are now providing services directly to clients as a result of embracing sustainability (Dzombo et al., 2017). The way commercial banks operate has changed as a result of the adoption of viable alternative banking channels. Although commercial banks have adopted these new methods of providing financial services, it is unclear how these methods have been ill affect their financial performance and efficiency (Parlasca, Johnen & Qaim, 2022). Other channels that commercial banks frequently use include agency banking, use of mobile, internet and through Automated Teller Machines, which widely accepted by persons with accounts in their respective banks. Thus, a study on sustainable SCM and the effectiveness of Kenyan commercial banks is required.

Numerous research on efficient and sustainable supply chain management have been conducted. The studies that are currently available from a global perspective include Mukhsin and Suryanto (2022), which evaluated the impact of Sustainable SCM on the performance of Indonesian Manufacturers and found that the Sustainable Practices affects competitive edge as well as their performance. According to research by Fu, Abdul Rahman, Jiang and Abbas (2022), a SSC chain has a favorable effect on the financial and operational performance of Pakistan's manufacturing sector. Sustainability affects the business economic performance of Chinese manufacturer’s enterprises, according to Yang and Wang (2023). The use of sustainable SCM strategies also improves performance and food enterprises’ quality assurance in Thailand according to Kuwornu, Khaipetch, Gunawan, Bannor and Ho (2023). Regionally, Muse (2022) found that

adopting sustainable methods had an impact on efficiency, flexibility, and quality, while Soyege, Makinde and Akinlabi (2023) discovered a favorable link between performance and green SCM of fast-moving consumer items in Lagos, Nigeria.

Locally, Arapha (2022) found that the adoption of sustainable practices by Oil and Gas Firms in Kenya had a beneficial influence on market share and operational efficiency. Opondi (2021) and Muema (2021) both focused on county governments' sustainable purchasing practices and found that sustainability affects supply chains' efficiency and agility, respectively. Obong'o (2021) noted that the adoption of sustainable SCM Practices in the pharmaceutical manufacturing entities had impacted efficiency, sales, and the reduction of carbon footprint, while Shamim (2021) came to the conclusion that sustainability practices affect Public University's Cost and delivery. While Shamim (2021) embraced descriptive and sampling as their designs, Obong'o (2021) adopted descriptive survey and census sampling. The research has a contextual gap since Shamim (2021) concentrated on Kenyan Public Universities while Obong'o (2021) concentrated on Pharmaceutical Manufacturers.

From the stated studies, it is evident that research has been done in the area of sustainability, but no study is known to have focused specifically on sustainable SCMP and operational efficiency of Kenyan Commercial Banks, leaving a void for the present study. The following questions were the focus of the investigation. What was the level of adoption of sustainable supply chain practices of commercial banks in Kenya? and what was the association between sustainable supply chain practices and operational efficiency of Kenyan commercial banks?

## 1.3 Research Objectives

i. To establish the extent of adoption of sustainable supply chain practices of commercial banks in Kenya
ii. To investigate the influence of supply chain practices and operational efficiency of commercial banks in Kenya

## 1.4 Value of the Study

The outcome could contribute to the Commercial Banks in associating their operational efficiency with sustainability practices. The outcome will be able to give a perspective on the widely adopted sustainable practices and their influence on operational efficiency and thus decision makers of Commercial Banks will make informed choices on the SSCMP to adopt and how they can be able to boost their OE.

Other than Commercial Banks, other organizations may copy the results to boost operational effectiveness. When managers in various organizations realize that sustainability practices are one method of increasing efficiency, the paper will aid them in arriving at informed judgments and in putting such principles into practice at their respective institutions.

The study aims to advance our understanding of operational effectiveness and sustainable business practices. The conclusions drawn from the data and suggestions maybe important to practitioners of supply chain, experts, and academicians. Due to the incomplete coverage of sustainability practices and their impact on operational efficiency, this will make it less hard for researchers to gather info that will benefit the entire world's

economy and advance reaction on this and associated topics drawn from recommendations.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

This chapter reviews the literature related to sustainable supply chain practices on operational efficiency of different sectors. It focuses on theoretical overview, relevant theories, sustainable SCM Practices, the conceptual framework and relationship between Sustainable SCM and operational efficiency. The reviewed literature is then summarized.

## 2.2 Theoretical framework

The theories steering the study were the Triple Bottom Line Theory (TBL) and Dynamic Capability Theory and they are subsequently elaborated.

### 2.2.1 Triple Bottom Line Theory

John Elkington, a management consultant, coined the phrase "triple bottom line" in the 1990s to refer to the economic, environmental, and social benefits of investments that may accrue in addition to or instead of a company's financial bottom line (Elkington, 1997). The idea is also known as blended value (Shim, Moon, Lee & Chung, 2021), triple value adding (Hammer & Pivo, 2017), and the 3Ps (people, planet, profit). The idea of sustainable development, which posits that progress ought to be executed in a manner that gratifies the needs of the current generation while conserving the ecology and offering opportunities for upcoming generations to execute, informs and relates to triple bottom line philosophy as posited by Żak (2015). The triple bottom line hypothesis states that in order to remain sustainable, a company must go beyond its single bottom line of

profitability. When entities commit to their society, the ecology and their profits in an equal manner, they can practice sustainable management (Farooq, Fu, Liu & Hao, 2021).

This idea aids managers and decision-makers in deciding how to act in unforeseen circumstances. The idea is so useful since it aids Commercial Bank decision-makers in developing better sustainable SCM processes that have an impact on Efficiency and include the 3PS into their operations. The theory is also appropriate because the subject of the paper is sustainable supply chain management (SCM), which emphasizes sustainability practices that are directly in line with TBL, i.e. people, planet and profit. As a result, entities can put these practices in place to be able to increase their operational efficiency.

### 2.2.2 Dynamic Capability Theory

Since Teece et al. (1997) first published the DCT, it has garnered a lot of interest. The idea seeks to explain how businesses might gain competitiveness in today's vigorous marketplace (Teece et al., 1997; Chien & Tsai (2012). According to Chowdhury and Quaddus (2017), an entity's dynamic capability entails its ability to assimilate, recreate and restore its resources with its capacity to adjust to the ever-changing commercial surroundings. An entity is well positioned to attain a superiority over those they are competing with in the same industry of operation by matching the capabilities, competencies and resources of the firm to the changes in surrounding (Zhang, Yang & Liu, 2022). Thus, entities may acquire a competitive superiority by changing and reconfiguring how they allocate their resource and skills in line with their capabilities. According to Sainsbury (2020), this is how an entity makes an effort to gather a variation

of brand-new and untested talents and competences. The newly attained skills assists in ascertaining that the entity's resources are efficiently structured and employed to boost superiority.

The theory relates to the article because it seeks to clarify how businesses might use their dynamic capacities to improve their operational effectiveness and increase their overall performance by responding to the shifting environment that commercial banks must thrive in. In order to increase operational efficiency, the banks may study Sustainable SCM methods as one of their dynamic capabilities.

### 2.3 Sustainable Supply Chain Practices

Sustainability practices are vital to any entity as they aid in improving their image in the market, boosts profitability as well as aid in conserving the environment (Dev et al, 2020). The SSC practices that were studied include Sustainable procurement, sustainable innovation, corporate social responsibility, sustainable risk management and sustainable financing.

#### 2.3.1 Sustainable Procurement

Sustainable procurement entails engaging in procurement processes and practices that are sustainable and have minimal impact on the environment. The entity may practice sustainable procurement by acquiring commodities with minimal ecological impact thus preserving the environment. Nayal et al. (2022) added that the entity should competitively source for their products and services by competitive bidding to save on cost and ensure that it procures exactly what is needed. Schoolman (2020) asserts that local acquisitions from local suppliers necessitates incorporating neighboring acquisitions into a firm's core

operations. Furthermore, Vukovic (2019) argues that the business ought to select vendors that can be accessible at all times in the neighborhood as locally manufactured items minimally impact the ecology negatively as their carbon footprints are minimal. Fu et al (2022) added that embracing information technology in an entity whereby majority of the relevant communications are done electronically like electronic procurement and communications via emails to minimize the use of paperwork conserves the environment by minimization of tree cutting used in making papers.

### 2.3.2 Sustainable Innovation

Sustainable innovation is the creation of new products and processes that has an added value for the customer and the dealer. Its main purpose is to minimize unwanted ecological impacts as well as stay ahead of competitors (Abdel-Baset et al., 2019; Sellitto and Hermann, 2019). Entities carry out innovations and research and development by inventing innovative and new means of doing things that are sustainable and beneficial to the entity as posited by Dev et al, (2020). Entities have come up with sustainable innovations for example energy saving strategies like use of solar panel systems (solar energy) and transparent windows/walls to capitalize on natural lighting during the day and thus save on power consumption which reduces electricity cost (Razzak, 2023). Sahoo and Vijayvargy (2021) posit that vacuum cleaning is another innovation whereby there is use of vacuum cleaners which saves on use of natural resources like water. Some entities have installed sensors in their entities both in lighting and water to ensure that water and electricity are only used when necessary thus aiding in environmental conservation as well as cost minimization (Dahl & Clement, 2020). Banks have also embraced paperless banking whereby they use digital banking application, phone banking

and provision of electronic annual reports as observed by Njagi et al (2020) in a bid to enhance their efficiency.

### 2.3.3 Corporate Social Responsibility

CSR is a pledge to bettering the societal well-being via flexible business techniques and donations of corporate resources as they are practices that boosts organization's reputation and competitiveness (Dev et al., 2020). They entail engaging in activities whereby entities have a day aside to participate in tree planting and donate trees to the community that they operate in and thus participate in environmental conservation. The entities may also organize for charity walks to raise money to cater for different functions like medical care for the sick in the society (AlBrakat et al., 2023). Nayal et al. (2022) posit that providing bursaries and sponsoring of students who are gifted but in need is also part of an entity being socially responsible. Trainings and seminars may be conducted as well so as to instruct and guide vendors on the upside of going green and inspire them in providing green commodities as posited by Vukovic (2019).

### 2.3.4 Sustainable Risk Management

Hasan et al (2020) observes that sustainable risk management involves engaging in behaviors, procedures and controls which eliminates risks or reduce them to what is considered to be an acceptable level. The entity needs to come up with strategies that manages risk that they may be able to face, and in so doing, they will be in a better position to know how to deal with the risk by avoiding, accepting or transferring it. This will enable the entity save on cost that they would otherwise have incurred had they not prepared for the risks. Oubrahim et al (2023) opine that entities also need to comply with

all the set statutory regulations to avoid fines and lawsuits which are cost that may be avoided and thus saved to be used on daily operations of the firm which may also be passed onto the clients as dividends. These entails adherence to the ISO Certifications standards, ecological regulations, county governments' by-laws and quality assurances. Collaboration with supply chain partners is vital as suppliers are allowed to be part of the design process in development of new products at the initial stages which allows an entity in benefiting from reducing costs and identifying risks that are involved during early stages in the process of designing products (Tan et al., 2020). Dahl and Clement (2020) opines that entities may transfer their risks through insurance and thus cushion them through financial losses.

### 2.3.5 Sustainable Financing

Banks are expected to play the intermediating role of mobilizing and allocating capital for the green agenda as observed by (AlBrakat et al., 2023). Banks are crucial in ensuring that the sustainability agenda is met in the community through which they operate in. One way in which this may be achieved is by offering unsecured loans in support of small businesses as well as partnering with them in their sustainable operations (AlBrakat et al., 2023). By giving opportunities to and funding employee groups that would otherwise be excluded from opportunities, like disadvantaged people, employment is impacted as observed by Nayal et al. (2022). Budgeting is another way of sustainable financing whereby entities budget for their operations and ensure that they stick to their budgets since they only purchase what is needed and necessary as observed by Vishwakarma et al (2023). The entity may also carry out regular financial audits as well as have external

auditors to audit their financial books for transparency and accountability purposes (Wu et al., 2022).

### 2.4 Measures of Operational Efficiency

Operational efficiency is the capability of an entity to deliver services or items to its clients in the most cost-effective way possible while maintaining the high quality of its goods and services. This is often attained by reforming an entity's main processes in order to respond to the ever altering market needs in a more effective and a cost-efficient way (Hasan et al., 2020). Five operational efficiency points are Cost, Quality, Speed, Timeliness and Flexibility as listed by Vencataya, Keshwar and Deveshika (2015). The study will adopt cost, quality and timeliness as they have been widely adopted by the majority of the study in measuring Operational Efficiency. Costs in supply chain, which include all expenses related to running a supply chain, should be kept to a minimum to maximize efficiency (Vencataya, Seebaluck & Doorga, 2016). Some of the costs in the banking sector that needs to be minimized entail charges of opening an account, interest accrued by loans, charges attached to withdrawal via ATM, cost related to new or replacing of lost ATM card, charges attributed to bank statement, saving Charges and money transfer cost as opined by Ali, Salman, Yaacob, Zaini and Abdullah (2020).

Quality, or "doing things right," is the constant fulfilment of customer expectations; nevertheless, the specifics of what needs to be done correctly will contrast as per the type of operation (Slack, Chambers & Johnston, 2010). Quality in the delivery of goods and services encompasses a wide range of factors, including performance characteristics, dependability, compliance, durability, usability, aesthetics, and perceived quality

(Gronroos, 2000). In the banking sector, service quality entails the space and appearance of banking hall, privacy of client's information, handling complaints from clients, convenience banking to bankers, satisfaction levels and timely information sharing between bank and clients (Luo, Wei, Ling & Huo, 2020).

Timeliness is defined as the amount of time between placement of a client's request and the accomplishment of their order (Slack, 2007). However, Robert Lowson (2002) contends that it refers to the amount of time taken for a client, whether internal or external, to request for a good or service and receive it. Based on Slack (2007), the primary upper hand of quick delivery of ordered items and services to the operation's clients is the way it betters the operation's ability to serve the customer. As a result, timeliness in the banking sector is viewed in terms of timely clearance of cheque, minimized interaction time between client and tellers, timely response to client's complaints, reduced quieting time, time taken to approve loan, account opening time and timely payment of dividends (Parlasca, Johnen & Qaim, 2022).

### 2.5 Empirical Literature

Both locally and globally, Sustainable Supply Chain has been the subject of extensive research. According to research by Fu, Abdul Rahman, Jiang, Abbas and Comite (2022), a sustainable supply chain has a favorable financial and operational impact on Pakistan's manufacturing sector. Unstructured interviews were used as the methodology. Instead of operational efficiency, the emphasis was on financial performance. Sustainable SC management affects the business economic performance of Chinese manufacturers' enterprises, according to Yang and Wang (2023). The use of sustainable SCM strategies

also improves quality assurance and performance and of food enterprises in Thai, according to Kuwornu, Khaipetch, Gunawan, Bannor and Ho (2023). Regionally, Muse (2022), using a descriptive survey, found that the implementation of sustainable practices in Somalian manufacturing enterprises had an impact on efficiency, flexibility, and quality. Operational effectiveness rather than operational efficiency was the main focus. In Lagos, Nigeria, Fast-Moving Consumer Goods Firms' performance and Green SCM were found to be positively correlated by Soyege, Makinde and Akinlabi (2023), using a survey research approach. FMCG was the main topic rather than commercial banks.

Locally, Arapha (2022) found that the adoption of sustainable practices by Oil and Gas entities in Kenya had a beneficial influence on market share and operational efficiency. For the study to attain its goals, the paper adopted a descriptive cross-sectional approach. Instead of banks, Opondi (2021) and Muema (2021) concentrated on county governments' sustainable procurement, and they established that sustainability effects supply chain agility and organizational performance, respectively. The emphasis was on the oil and gas industry. Although both studies employed a descriptive strategy, they failed to establish a connection between Sustainable SCM Practices and Operational Efficiency. Obong'o (2021) noted that the adoption of sustainable SCM Practices in the pharmaceutical manufacturing entities had impacted efficiency, sales, and the reduction of carbon footprint, while Shamim (2021) came to the conclusion that sustainability practices affect Public University's Cost and delivery.

**Table 2. 1 Summary of Research on Sustainable Supply Chain**

| Author(s) | Focus of the Study | Methodology | Study Outcomes | Study Gap |
|---|---|---|---|---|
| **Fu et al (2022)** | Sustainable SCM and Financial performance of Pakistan manufacturers | unstructured interviews | Supply chain strategy, supply chain network design, organizational structure, and information system enhances performance | Methodology used was Unstructured Interviews and not structured questionnaires |
| **Kuwornu et al. (2022)** | SSCM quality assurance and performance of Thailand's food companies | Systematic Literature Review | Sustainable SCM enhances quality assurance and performance | Focused on sustainability, quality and performance, not Operational Efficiency |
| **Muse (2022)** | SSCM and Operational Performance of Somali manufacturers | Descriptive Survey Design | Efficiency, Flexibility and quality were influenced by Sustainability Practices | Covered Manufacturing firms leaving Commercial Banks |
| **Soyege et al. (2023)** | Green SCM of Nigerian Fast-Moving Consumer Goods | Descriptive Survey | Green sourcing, green distribution, green warehousing, and inverse logistics impacts performance | Focus was on Green SCM Practices and not Sustainable SCM Practices |
| **Muema (2021** | Sustainable Procurement and County Governments' organizational Performance | Descriptive design | Economic, Social and ecological procurement influences performance | Focused on Sustainable Procurement practices and not Sustainable SCM practices |
| **Arapha (2022** | Sustainable SCM and performance of Kenyan Gas and Oil industry | descriptive cross-sectional design | Social sustainable practices had insignificant and positive effect on firm's performance | Focus was on Oil and Gas industry and not commercial Banks |
| **Opondi (2021)** | Agility of County Governments and Sustainable Procurement | Descriptive cross sectional | Sustainable Procurement influenced SC efficiency and Responsiveness | Focused on Sustainable Procurement practices and not Sustainable SCM practices |
| **Obong'o (2021)** | Sustainable SCM and organizational performance of Pharmaceutical firms | Descriptive survey | Ecological, Social and Economic Sustainability influences operational efficiency and sales | Focused on Pharmaceutical firms and not Commercial banks |

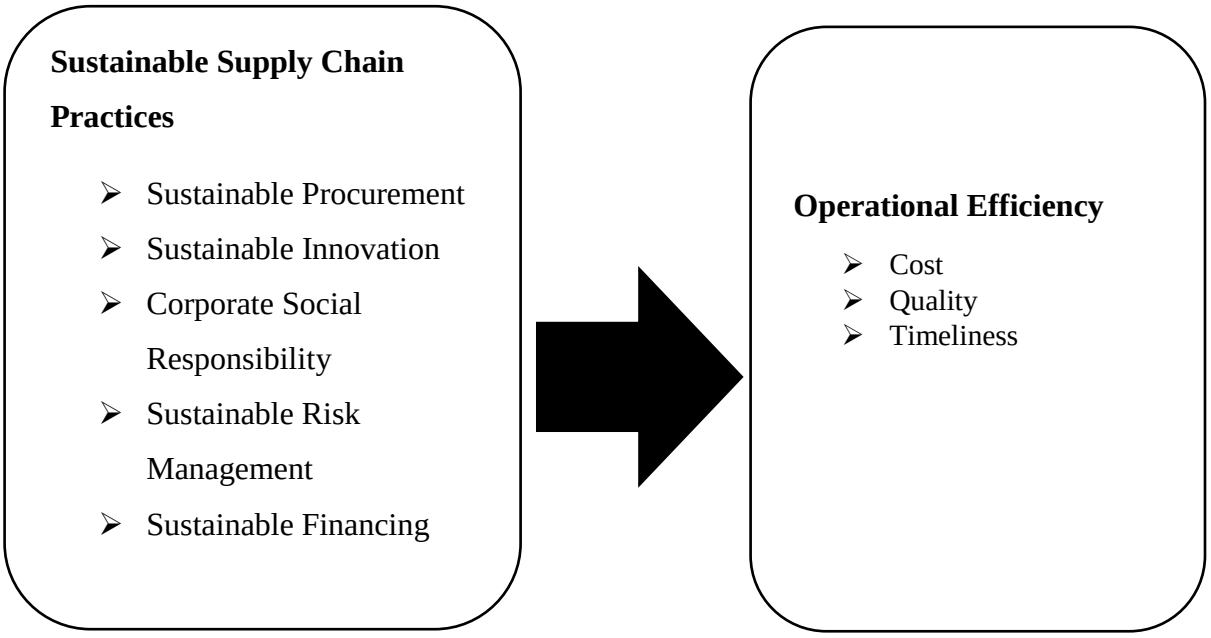
**Source:** *Research Data (2023)*

## 2.6 Conceptual Framework

According to Leshem and Trafford (2007), a conceptual framework is a presentation that is schematic and depicts variables that, when placed next to one another, demonstrate

their correlation. It is based on a collection of broad concepts that are employed to explain the alleged existence of a correlation between the variables being investigated (Jabareen, 2008). Operational efficiency served as the dependent variable, while Sustainable Supply Chain served as the independent factors. The concepts under SSCM practices included Sustainable Procurement, Sustainable Innovation, Corporate Social Responsibility, Sustainable Risk Management and Sustainable Financing. Cost, Quality and Speed are the variables under Operational Efficiency. The adoption of sustainable SCM techniques was predicted to improve operational efficiency.

**Figure 2. 1 Conceptual Framework**




**Source**; *Researcher (2023)*

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1 Introduction

The segment concentrated on the study's methodology. Specifically, the study's design, the targeted population, data collecting and its analysis procedure were addressed.

## 3.2. Research Design

Descriptive research design was used in this research and enabled the researcher to compile the top Sustainable SCM practices used by Commercial Banks and correlate them with operational effectiveness. The analysis of the data gathered was useful in exploring the perceptions that would aid in comprehending the association between the suggested variables and provide insightful evidence (Kothari, 2004) on the significance of sustainability practices and how to maximize it to boost efficiency that may boost entity's superiority in the modern environmentally conscious business environment (Kothari, 2017). Researchers can quickly and accurately collect systemic primary data from Commercial Banks using a descriptive research approach (Cooper & Schindler, 2006). Additionally, the design ensures that limitations and interferences are kept to a minimum.

## 3.3 Population of Study

Based on Bryman (2016), the population is all the set of unit whereby the information is to be obtained. The population will thus be the Kenyan commercial banks. The targeted population was made up of forty-three commercial banks being the overall number of commercial banks that were registered (CBK, 2022). Due to the minimal population, a census was conducted to acquire information from the entire Kenyan commercial banks.

Therefore, the paper targeted a single respondent per the 43 commercial banks that is the supply chain managers or their equivalent.

### 3.4 Data Collection

The paper used primary data obtained via online questionnaire and, when necessary, a drop and pick later method. It only required well-structured questionnaires, which can be distributed easily across various socially professional podiums like LinkedIn and diverse social networks using free online survey tools supported by a number of websites, making this method cost-effective. The 43 Commercial Banks in Nairobi, or their equivalent, were the subject of the study on sustainable supply chain. These individuals were best placed to offer insightful answers to the research queries because they were directly involved in supply chain management. A total of 43 questionnaires, consisting of 3 sections (A: Demographic data, B: The level to which Sustainable SCM practices were adopted by Kenyan Commercial Banks, and C: The correlation amongst Sustainable SCM and Operational Efficiency of Kenyan Commercial Banks).

### 3.5 Data Analysis

This research applied data analysis techniques based on linear regression in determining the association between the independent and dependent variables and descriptive statistics to examine the adoption extent of Sustainable SCM. Objective one was analyzed descriptively using the standard deviations and mean while objective two was regressed.

Regression model was in the form of;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + + e$$

**Where;**

Y= Operational Efficiency

$X_1$ to $X_3$ = Sustainable Supply Chain

$X_1$ = Sustainable procurement, $X_2$=Sustainable Innovation, $X_3$=Corporate Social

Responsibility, $X_4$= Sustainable Risk Management, $X_5$= Sustainable Financing

**Table 3. 1 Summarized data analysis techniques**

| **Objectives** | **Section** | **Tool for collecting** | **Analysis needed** |
|---|---|---|---|
| Demographic information | PART A | Questionnaire | Descriptive Statistics (%) |
| i). The adoption level of Sustainable Supply Chain Practices by the Commercial Banks in Nairobi | PART B | Questionnaire | Descriptive Statistics |
| ii). The influence of Sustainable SCM on Operational Efficiency of Commercial Banks in Nairobi, Kenya | PART C | Questionnaire | Regression analysis |

**Source:** *Research Data (2023)*

# CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION OF FINDINGS

## 4.1 Introduction

The study's aim was to examine how Sustainable Supply Chain practices impacts operational efficiency of Kenyan Commercial Banks. The outcome of the objectives is subsequently discussed.

## 4.2 Response Rate

The research targeted 43 Kenyan Commercial Banks hence the total number of respondents were 43 as a single questionnaire was administered per Bank. Comprehensive data was acquired from 31 commercial banks which translated to 72.09% of the respondents. The outcome is illustrated in Table 4.1.

**Table 4. 1 Rate of Response**

| **Response** | **Frequency** | **Percent** |
|---|---|---|
| Filled Google forms | 31 | 72.09 |
| Unfilled Google forms | 12 | 27.91 |
| **Total** | **43** | **100** |

**Source: Researcher (2023)**

## 4.3 Demographic information

The background information was obtained from the Kenyan Commercial Banks which entailed the position held, highest educational levels and period of service in their entities and the outcome are presented below.

### 4.3.1 Title of respondents

The participants had to determine the title that they held and as presented in Table 4.2, 45.16% were supply chain managers, 22.58% were finance managers with the remaining 32.26% being supply chain/finance officers. This signifies that majority of the participants held a managerial role (supply chain/finance managers) as only 32.26 % of the respondents were officers.

**Table 4. 2 Respondent's Title**

| **Title** | **Frequency** | **Percentage** |
|---|---|---|
| Supply Chain Manager | 14 | 45.16 |
| Finance Manager | 7 | 22.58 |
| Supply chain/finance officer | 10 | 32.26 |
| **Total** | **31** | **100** |

**Source: Researcher (2023)**

### 4.3.2 Highest Education Level

The highest academic level of the participants was to be determined and Table 4.3 portrays that 25.81% of the managers and officers held diplomas, 48.38% held bachelor's degree and 25.81% held postgraduate degree. Given that majority of the managers and officers represented by 74.91% were graduates and postgraduates, it is an indication that they were well-educated and their responses to the study could be relied upon from a scholar's perspective.

**Table 4. 3 Education Level**

| **Education** | **Frequency** | **Percentage** |
|---|---|---|
| Diploma | 8 | 25.81 |
| Degree | 15 | 48.38 |

| | | |
|---|---|---|
| Post Graduate | 8 | 25.81 |
| **Total** | **31** | **100** |

**Source: Researcher (2023)**

### 4.3.3 Time of Service

The respondents had to specify the period that they had served their commercial banks and Table 4.4 exhibits that 12.90% of the respondents had served for a time not surpassing two year, 32.30%, for three to five years, 35.48% for six to ten years with the residual 19.35% having served their respective commercial banks for a term beyond ten years. This implies that a greater proportion, represented by 87.10%, of research participants had worked for over three years and thus were trusted to offer a trustworthy feedback as per their experience.

**Table 4. 4 Service Time**

| **Time of service** | **Frequency** | **Percentage** |
|---|---|---|
| Zero-2 years | 4 | 12.90 |
| 3-5 years | 10 | 32.30 |
| 6-10 years | 11 | 35.48 |
| Above 10 years | 6 | 19.35 |
| **Total** | **31** | **100** |

**Source: Researcher (2023)**

## 4.4 Adoption of Sustainable Supply Chain Practices

Objective one aimed at examining the adoption extent of sustainable supply chain practices by Kenyan commercial banks and the outcome are as presented.

### 4.4.1 Sustainable procurement

On examining the adoption extent that the Kenyan commercial banks had adopted sustainable procurement table 4.5 portrays that the acquisition of commodities with minimal ecological impact (M=3.16, S.Dev=1.18) and the bank competitively sourcing for their products and services by competitive bidding (M=3.38, S.Dev=1.22) were moderately adopted by the Kenyan commercial banks while purchasing of commodities from local vendors by the banks (M=3.45, S.Dev=1.05) was adopted to a large extent. Putting in place and embracing electronic procurement methods whereby all the procurement processes are done electronically (M=3.37, SD=1.02) and doing most of the communication electronically via e-mails and on website (M=3.36, S. Dev=1.25) were moderately adopted by the commercial banks as illustrated by their means.

**Table 4. 5 Sustainable procurement**

| | **N** | **Min** | **Max** | **Mean** | **Std. Dev** |
|---|---|---|---|---|---|
| The entity acquires commodities with minimal ecological impact | 31 | 1.00 | 5.00 | 3.1613 | 1.18594 |
| The bank competitively source for their products and services by competitive bidding | 31 | 1.00 | 5.00 | 3.3871 | 1.22956 |
| The banks purchases their commodities from local vendors | 31 | 1.00 | 5.00 | 3.4516 | 1.05952 |
| The firm has put in place and embraced electronic procurement methods whereby all the procurement process are done electronically | 31 | 2.00 | 5.00 | 3.3731 | 1.02233 |
| Most of the communication are done electronically via mails and on website | 31 | 1.00 | 5.00 | 3.3675 | 1.25638 |
| **Valid N (listwise)** | **31** | | | **3.3478** | **1.15071** |

**Source: Researcher (2023)**

The general score of M=3.34, S. Dev=1.15 implies that Kenyan commercial banks have moderately adopted sustainable procurement. The results contradict that of El Baz and

Ruel (2021) who note that sustainable purchasing enhances the procurement processes and practices by ensuring that what they procure is sustainable and have minimal impact on the environment. Nayal et al. (2022) added that purchasing sustainably is vital to an entity as they competitively source for their products and services by competitive bidding thus saving on cost and ensure the acquisition of exactly what is needed. Vukovic (2019) argues that the business ought to select vendors that can be accessible at all times in the neighborhood as locally manufactured items minimally impact the ecology negatively as their carbon footprints are minimal.

### 4.4.2 Sustainable Innovations

The managers and officers were tasked with ascertaining the adoption extent of sustainable innovations. From table 4.6, engaging in research and development to remain innovative (M=3.29, S. Dev=1.00), installation of solar panels systems (solar energy) and transparent windows/walls to capitalize on natural lighting during daytime (M=3.22, SD=1.28) and using vacuum cleaners to carry out cleaning (M=3.32, SD=1.01) were moderately adopted by the Kenyan commercial banks. Having in place sensors in electricity and water so as to save on water and electricity by using it only when needed (M=3.19, SD=1.27) and automation of all the bank's processes to enhance efficiency and minimize duplication of roles (M=3.35, SD=1.01) were moderately adopted while embracing paperless banking whereby the banks use digital banking application, phone banking and provision of electronic annual reports (M=3.58, S.Dev=1.01) was largely adopted by the Kenyan commercial banks.

The general score (M=3.32, SD=1.11) affirms that sustainable innovations was adopted to a moderate extent by the Kenyan commercial banks. The findings differ with that of

Abdel-Baset et al (2019) who ascertained that sustainable innovation reduces negative environmental impacts as well as aid firms in staying ahead of competitors. Razzak (2023) found that engaging in sustainable innovations like energy saving strategies and use of solar panel systems (solar energy) and transparent windows/walls to capitalize on natural lighting during the day and are crucial in saving power consumption which ultimately reduces electricity cost. Dahl and Clement (2020) found that the use of vacuum cleaning is another innovation which saves on use of natural resources like water. Sellitto and Hermann (2019) adds that installation of sensors both in lighting and water ensure that water and electricity are only used when necessary thus aiding in environmental conservation, cost minimization and efficiency.

**Table 4. 6 Sustainable Innovations**

| | N | Min | Max | Mean | Std. Dev |
|---|---|---|---|---|---|
| The entity engages in research and development to remain innovative | 31 | 1.00 | 5.00 | 3.2903 | 1.00643 |
| The bank has installed solar panels systems (solar energy) and transparent windows/walls to capitalize on natural lighting during daytime | 31 | 1.00 | 5.00 | 3.2258 | 1.28348 |
| The entity uses Vacuum cleaners to carry out their cleaning | 31 | 1.00 | 5.00 | 3.3226 | 1.01282 |
| The entity has put in place sensors in electricity and water so as to save on water and electricity by using it only when needed | 31 | 1.00 | 5.00 | 3.1935 | 1.27591 |
| The entity has embraced paperless banking whereby they use digital banking application, phone banking and provision of electronic annual reports | 31 | 2.00 | 5.00 | 3.5806 | 1.08855 |

| | | | | | |
|---|---|---|---|---|---|
| The entity has automated all their processes to enhance efficiency and minimize duplication of roles | 31 | 2.00 | 5.00 | 3.3548 | 1.01812 |
| **Valid N (listwise)** | **31** | | | **3.3279** | **1.11418** |

**Source: Researcher (2023)**

### 4.4.3 Corporate Social Responsibility

On examining the adoption extent that the Kenyan commercial banks had adopted corporate social responsibility, table 4.7 reveals that participating in tree planting as well as donating trees to the community was adopted to a medium extent as affirmed by the mean of 3.22. Conducting Charity walks to raise money that cater for different functions was moderately adopted with the mean of 2.96 with provision of bursaries and sponsorship for students who are gifted but in need being moderately adopted as well with the mean of 3.09. Carrying out trainings and seminars on different issues that affect the communities and how they can better themselves (M=3.48, SD=1.02) and carrying out talent search on business ideas and funding those with best ideas (M=3.45, SD=1.12) were largely adopted as specified by their specific deviations and means.

**Table 4. 7 Corporate Social Responsibility**

| | **N** | **Min** | **Max** | **Mean** | **Std. Dev** |
|---|---|---|---|---|---|
| The entity participates in tree planting as well as donates trees to the community | 31 | 1.00 | 5.00 | 3.2258 | 1.11683 |
| Charity walks are conducted to raise money that cater for different functions | 31 | 1.00 | 5.00 | 2.9677 | 1.16859 |
| The entity provides bursaries and sponsorship of students who are gifted but in need | 31 | 1.00 | 5.00 | 3.0968 | 1.10619 |

| | | | | | |
|---|---|---|---|---|---|
| The entity carries out Trainings and seminars on different issues that affect the communities and how they can better themselves | 31 | 1.00 | 5.00 | 3.4839 | 1.02862 |
| The entity carries out talent search on business ideas and funds those with best ideas | 31 | 1.00 | 5.00 | 3.4516 | 1.12068 |
| **Valid N (listwise)** | **31** | | | **3.2452** | **1.10812** |

**Source: Researcher (2023)**

Corporate social responsibility was moderately adopted by commercial banks with the mean of 3.24. The result disagrees with that of Dev et al, (2020) who posit that CSR is vital in improving societal well-being through flexible business practices and donations of corporate resources as they are activities as well as enhance a firm's competitiveness and reputation. AlBrakat et al. (2023) adds that CSR activities like participating in tree planting and donating trees to the community that they operate in is vital in environmental conservation. Nayal et al. (2022) posit that providing bursaries and sponsoring of students who are gifted but in need is also part of an entity being socially responsible and ensures that the community educated their bright students as well as provides them with employment.

### 4.4.4 Sustainable Risk Management

The adoption extent of sustainable risk management practice had to be determined and table 4.8 affirms that having in place a risk management culture that focuses on eliminating or reducing risk occurrence (M=3.25, SD=0.99) and complying with all the set statutory regulations like ISO Certification to avoid fines and lawsuits (M=3.29, S.Dev=1.03) were moderately adopted by the Kenyan commercial banks. The banks collaborating with supply chain partners in ensuring that they obtain what they need (M=3.54, SD=1.02) was largely adopted while having a culture of mitigating risks

(M=3.41, SD=1.27) and the bank transferring their risks through insurance which cushions them on financial losses (M=3.16, S.Dev=1.21) and having a risk management department that focuses on risk occurrences and finds a advices on a proper way of combatting the risk M=3.28, S.Dev=0.97) were moderately adopted by Kenyan commercial banks as prescribed by their specific means and deviations.

Generally, sustainable risk management was moderately adopted with the mean of 3.30 and deviation of 1.05. The result goes against that of Oubrahim et al (2023) who note that sustainably managing risk is crucial for a firm as they are able to device strategies that manages risk that they may be able to face, and in so doing, they will be in a better position to know how to deal with the risk and in so doing, they will be able to save on cost that they would otherwise have incurred had they not prepared for the risks, Dahl and Clement (2020) opines that entities may benefit from managing their risks by transferring their risks through insurance and thus cushion them through financial losses. Tan et al (2020) add that that entities that manages their risks by complying with all the set statutory regulations benefit by avoiding fines and lawsuits which are cost that may be avoided and thus saved to be used on daily operations of the firm which may also be passed onto the clients as dividends. Furthermore, Thun and Hoenin (2008) adds that the managing risks aids firms in undertaking analysis of evaluation, controlling and risk monitoring in the purchasing section.

**Table 4. 8 Sustainable Risk Management**

| | N | Min | Max | Mean | Std. Dev |
|---|---|---|---|---|---|
| The entity has in place a risk management culture that focuses on eliminating or reducing risk occurrence | 31 | 1.00 | 5.00 | 3.2581 | .99892 |
| The entity complies with all the set statutory regulations like ISO Certification to avoid fines and lawsuits | 31 | 1.00 | 5.00 | 3.2903 | 1.03902 |
| The entity collaborates with supply chain partners in ensuring that they obtain what they need | 31 | 1.00 | 5.00 | 3.5484 | 1.02758 |
| The bank transfers their risks through insurance and which cushions them on financial losses | 31 | 1.00 | 5.00 | 3.1613 | 1.21372 |
| The bank has a risk management department that focuses on risk occurrences and finds a advices on a proper way of combatting the risk | 31 | 1.00 | 5.00 | 3.2903 | .97275 |
| **Valid N (listwise)** | **31** | | | **3.3097** | **1.05036** |

**Source: Researcher (2023)**

### 4.4.5 Sustainable Financing

The adoption extent of sustainable financing practice had to be determined and table 4.9 reflects that the banks provides unsecured loans in support of small businesses (M=3.16, SD=0.96) only purchasing what is needed, necessary and within the budget (M=3.26, SD=1.12) and executing regular financial audits for transparency and accountability purposes (M=3.41, SD=1.28) were all adopted to a medium extent by the commercial banks. The entity carrying out talent search on business ideas and funds those with best ideas (M=3.09, SD=1.19) and competitively sourcing for commodities to save on cost (M=3.35, SD=1.22) were moderately adopted as well as per their means.

**Table 4. 9 Sustainable Financing**

| | N | Min | Max | Mean | Std. Dev |
|---|---|---|---|---|---|
| The bank provides unsecured loans in support of small businesses | 31 | 1.00 | 5.00 | 3.1613 | .96943 |
| The banks only purchase what is needed, necessary and within the budget | 31 | 1.00 | 5.00 | 3.2653 | 1.12833 |
| The banks carry out regular financial audits for transparency and accountability purposes | 31 | 1.00 | 5.00 | 3.4194 | 1.28515 |
| The entity carries out talent search on business ideas and funds those with best ideas | 31 | 1.00 | 5.00 | 3.0968 | 1.19317 |
| The entity competitively source for their commodities to save on cost | 31 | 1.00 | 5.00 | 3.3548 | 1.22606 |
| **Valid N (listwise)** | **31** | | | **3.2595** | **1.15828** |

**Source: Researcher (2023)**

The general score portrays that sustainable financing was moderately adopted (M=3.25, Dev=1.15**)** by the commercial banks. The outcome controverts that of AlBrakat et al (2023) who pointed out that banks play a crucial role in ensuring that the sustainability agenda is met in the community through which they operate in by offering unsecured loans in support of small businesses as well as partnering with them in their sustainable operations. Wu et al (2022) argues that sustainable financing is also critical in job provision as small and disadvantaged groups are supported by banks through funding or unsecured loans which they are able to pay as well as be able to better their lives. Vishwakarma et al (2023) concludes that firms that carry out regular financial audits as well as have external auditors to audit their financial books are able to achieve economic sustainability, transparency and accountability.

### 4.5 Operational Efficiency

The participants were tasked with rating the level which sustainable supply chain practices impacts operational efficiency.

#### 4.5.1 Sustainable supply chain practices and cost

The respondents had to rate the level that sustainable supply chain practices impact cost of commercial banks and the outcome are as shown.

**Table 4. 10 Sustainable supply chain practices and cost**

| | N | Min | Max | Mean | Std. Dev |
|---|---|---|---|---|---|
| The firm is has minimized interest rates on loan | 31 | 1.00 | 5.00 | 3.2581 | 1.29016 |
| The banks have reduced ATM withdrawal charges | 31 | 1.00 | 5.00 | 3.0968 | 1.04419 |
| There is reduced bank statement charges | 31 | 1.00 | 5.00 | 3.6129 | 1.20215 |
| The firm has experienced minimized money transfer charges | 31 | 1.00 | 5.00 | 3.5484 | 1.26065 |
| Minimized cost of operations | 31 | 1.00 | 5.00 | 3.3226 | 1.10716 |
| **Valid N (listwise)** | **31** | | | **3.3677** | **1.18081** |

**Source: Researcher (2023)**

Table 4.10 portrays that the banks having minimized interest rates on loan (M=3.36, SD=1.18), experiencing reduced ATM withdrawal charges (M=3.09, SD=1.04) and minimized cost of operations (M=3.32, SD=1.10) were moderately influenced by the adoption of sustainable supply chain practices. Having reduced bank statement charges (M=3.61, SD=1.20) and experiencing minimized money transfer charges (M=3.54, SD=1.26) were largely impacted by the adoption of sustainable supply chain practices as demonstrated by their respective means.

#### 4.5.2 Sustainable supply chain practices and quality

The participants had to provide the level which sustainable supply chain practices influenced quality.

**Table 4. 11 Sustainable supply chain practices and quality**

| | N | Min | Max | Mean | Std. Dev |
|---|---|---|---|---|---|
| The bank has experienced reduced complaints from clients | 31 | 1.00 | 5.00 | 3.0000 | 1.15470 |
| The banks have come up with convenience banking techniques to clients | 31 | 1.00 | 5.00 | 3.3871 | 1.05443 |
| The firm has enhanced Privacy of customer information | 31 | 2.00 | 5.00 | 3.5484 | .92516 |
| The banks offer quality services to its clients | 31 | 1.00 | 5.00 | 3.3548 | 1.05035 |
| The entity ensures that there is enhanced customer satisfaction levels | 31 | 1.00 | 5.00 | 3.2258 | 1.23044 |
| **Valid N (listwise)** | **31** | | | **3.30322** | **1.08298** |

**Source: Researcher (2023)**

Table 4.11 shows that the bank have experienced reduced complaints from clients (M=3.00, SD=1.15), came up with convenience banking techniques to clients (M=3.38, SD=1.05) and offering of quality services to its clients (M=3.35, SD=1.05) were all moderately influenced by the adoption of sustainable supply chain practices. The banks having enhanced privacy of customer information (M=3.38) was impacted to a large extent while ensuring that there is enhanced customer satisfaction levels (M=3.22) was influenced to a medium extent by the Kenyan commercial banks as perceived by their means.

### 4.5.3 Sustainable supply chain practices and timeliness

The officers and managers were asked to provide the level which sustainable supply chain practices affects timeliness of commercial banks and Table 4.12 illustrates that the

adoption of SSC practices has moderately enhanced minimized rate of timely clearing cheque with the mean of 3.25 and timely response to client's complaints with the mean of 3.38. Timely service delivery (M=3.35) and experiencing of reduced queuing time (M=3.20,) were impacted to a large extent. Minimization of loan approval time (M=3.35) and timely payment of dividends (M=3.36) were both moderately influenced by the adoption of sustainability practices of commercial banks.

**Table 4. 12 Sustainable supply chain practices and timeliness**

| | N | Min | Max | Mean | Std. Dev |
|---|---|---|---|---|---|
| The firm has enhanced minimized rate of timely clearing cheque | 31 | 1.00 | 5.00 | 3.2581 | 1.15377 |
| The timely responds to client's complaints | 31 | 1.00 | 5.00 | 3.3871 | 1.20215 |
| The entity has experienced timely service delivery | 31 | 1.00 | 5.00 | 3.5484 | 1.09053 |
| The entity has minimized loan approval time | 31 | 1.00 | 5.00 | 3.3548 | 1.08162 |
| The firm has reduced queuing time | 31 | 1.00 | 5.00 | 3.4839 | .99569 |
| The entity has experienced timely payment of dividends | 31 | 1.00 | 5.00 | 3.3548 | 1.11201 |
| **Valid N (listwise)** | **31** | | | **3.3978** | **1.31992** |

**Source: Researcher (2023)**

### 4.6 Impact of sustainable supply chain practices on operational efficiency

The research aimed at determining the association between sustainable supply chain and operational efficiency of commercial banks in Kenya. Data was regressed and the outcomes are as outlined.

#### 4.6.1 Regression Model Summary

The study's regression model summary is shown in Table 4.13.

**Table 4. 13 Regression Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .910[a] | .815 | .739 | .41328 |

a. Predictors: (Constant), Sustainable procurement, sustainable innovations, corporate social responsibility, sustainable risk management, sustainable financing

**Source: Researcher (2023)**

As presented in table 4.13, the $R^2$ is 0.815 and when translated, it becomes 82%. This infers that 82% of operational efficiency is attributed to the adoption on sustainable supply chain by Kenyan commercial banks. The remaining 18% of the model is credited to numerous factors not explored by the research.

### 4.6.2 ANOVA Analysis

Table 4.14 illustrates that F value of 32.169 is greater than the F critical of 2.604, an affirmation of a statistical significant model. This is verified by the value of P .000 being lower than 5%. Hence, sustainable supply chain practices (Sustainable procurement, sustainable innovations, corporate social responsibility, sustainable risk management, sustainable financing) is a suitable predictor of operational efficiency of commercial banks.

**Table 4. 14 ANOVA Analysis**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 27.472 | 5 | 2.604 | 32.169 | .000[b] |
| | Residual | 4.270 | 25 | .171 | | |
| | Total | 31.742 | 30 | | | |

a. Dependent Variable: Operational Efficiency

b. Predictors: Sustainable procurement, sustainable innovations, corporate social responsibility, sustainable risk management, sustainable financing

**Source: Researcher (2023)**

### 4.6.3 Regression coefficients

Table 4.15 shows the regressed coefficient which shows the affiliation between sustainable supply chain and efficiency of Kenyan commercial banks. The model portrays a constant value of 0.024 which infers that when the predictor value is held at a constant, operational efficiency of commercial banks would be 0.024

The resulting equation for linear regression is:

Operational efficiency = 0.024 + 0.632 Sustainable procurement + 0.540 sustainable innovations + 0.134 sustainable risk management

**Table 4. 15 Regression coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .024 | .224 | | .108 | .915 |
| | Sustainable procurement | .632 | .199 | .595 | 3.170 | .004 |
| | Sustainable innovations | .540 | .184 | .532 | 2.933 | .007 |
| | Corporate social responsibility | .212 | .228 | .198 | .933 | .360 |
| | Sustainable risk management | .134 | .140 | .117 | .963 | .035 |
| | Sustainable financing | .180 | .148 | .170 | 1.221 | .234 |

a. Dependent Variable: Operational Efficiency

**Source: Researcher (2023)**

From table 4.15, Sustainable procurement with the p value of 0.004 infers that it has a statistical significance at 5% critical value as it the p value does not surpass 0.05. This is an inference that Sustainable procurement has a relationship and impacts operational

efficiency of Kenyan commercial banks. Sustainable procurement had a coefficient of 0.632 an indication that a unit surge in procuring sustainably results to a growth in operational efficiency of commercial banks by 0.632.

Sustainable innovations impact operational efficiency of commercial banks as it has a p value of 0.007 which does not surpass 5%. This indicates that it has an association and impacts operational efficiency of commercial banks in Kenya. Having a coefficient of 0.540 infers that a unit upsurge in sustainable innovation would lead to a surge in operational efficiency of commercial banks by 0.540.

Corporate social responsibility with the p value of 0.360 implies that it is insignificant at 5% critical value as it surpasses 0.05. This means that CSR has no relationship (p 0.360>0.05) and does not impact operational efficiency of Kenyan commercial banks. With the coefficient of 0.212, a unit increase in CSR would yield an associated gain of 0.212 in operational efficiency of commercial banks.

Sustainable risk management has a statistical relevance and is positively correlated with operational efficiency of Kenyan commercial banks as it has a p value that is lower than 0.05 (p 0.035<0.05). When all factors are upheld at zero, a unit change in sustainable risk would yield a related gain in operational efficiency by 0.134. With the p value of 0.005, it means that sustainable risk management has a positive association and impacts operational efficiency of commercial banks.

Sustainable financing does not influence operational efficiency as it has a p value of 0.234 which exceeds 5%. This affirms that it has a statistical insignificance (p 0.234>0.05) on operational efficiency and thus no correlation between the variables. When all factors are

upheld at zero, a unit change in sustainable financing would yield an associated gain in operational efficiency by 0.180.

The outcome contradicts as well as concurs with different literature. The findings are supported by that of El Baz and Ruel (2021) who established that Risk management in Supply chains is essential as it aids organization in risks identification and minimization along the chain as well as enhance their performance. Zhang and Okoroafo (2014) noted that for entities to be successful in the long run, they need to effectively and efficiently manage the supply risks entirely and having a risk mitigation strategy may aid logistics firms in managing their risks. Johnson and Templer (2011) posit that improvement of various practices of managing Supply Chain Risks positively influences an institutions performance. Singh (2020) indicated that organizations that sustainably manages their risks are able to execute better decisions and mitigate unwanted influence of ecological uncertainty as well as enhance a firm's financial performance. Nugraha et al (2019) conclude that properly evaluating supply chain risks enhances SCP.

### 4.7 Discussion of Findings

The aim of the study was to determine the association between sustainable supply chain and operational efficiency of commercial banks in Kenya. The study established a mixed outcome as some sustainable supply chain practices were established to have a positive association with operational efficiency whereas others were found to have an insignificant and no relationship with operational efficiency of commercial banks. Sustainable procurement, sustainable innovations and sustainable risk management were established to have a correlation and thus influenced operational efficiency of Kenya commercial banks. Corporate social responsibility and sustainable financing were statistically

insignificant and were found to have no association and thus had no influence on operational efficiency of commercial banks.

The outcome contradicts as well as concurs with different literature. The outcome aligns with that of Fu et al (2022) a sustainable supply chain has a favorable financial and operational impact on Pakistan's manufacturing sector. Kuwornu et al (2023) sustainable SCM strategies also improves quality assurance and performance of food enterprises in Thai. Muse (2022) found that the implementation of sustainable practices in had an impact on efficiency, flexibility, and quality. Obong'o (2021) noted that the adoption of sustainable SCM Practices in the pharmaceutical manufacturing entities had impacted efficiency, sales, and the reduction of carbon footprint, while Shamim (2021) came to the conclusion that sustainability practices affect Public University's Cost and delivery.

The findings contradict that of Mukhsin and Suryanto (2022) who pointed out that sustainability practices of sustainable innovation had no influence on competitiveness and efficiency. Yang and Wang (2023) added that sustainable risk management and sustainable purchasing did not impact quality and timeliness. The outcome controverts that of Arapha (2022) who concludes that that social sustainability (CSR) and internal ecological management (sustainable purchasing) does not impact operational efficiency.

# CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This section summarizes, concludes and makes recommendations as per the outcome of the paper.

## 5.2 Summary of the Study

The paper's core objectives had to determine the adoption extent of sustainable supply chain practices as well as investigate the correlation between sustainable supply chain practices and operational efficiency of Kenyan commercial banks. The first objective established that sustainable procurement, sustainable innovations, corporate social responsibility, sustainable risk management, sustainable financing were all moderately adopted by the commercial banks. Sustainable procurement was adopted by the acquisition of commodities with minimal ecological impact, the bank competitively sourcing for their products and services by competitive bidding and purchasing of commodities from local vendors by the banks. The banks also embraced electronic procurement methods whereby all the procurement process are done electronically as well as communicating electronically via e-mails and on website.

Sustainable innovations were moderately adopted by the banks engaging in research and development to remain innovative, installing solar panels systems (solar energy) and transparent windows/walls to capitalize on natural lighting during daytime and using vacuum cleaners to carry out cleaning. The banks also had in place sensors in electricity

and water so as to save on water and electricity by using it only when needed, automated all the bank's processes to enhance efficiency and minimize duplication of roles and embraced paperless banking whereby the banks use digital banking application, phone banking and provision of electronic annual reports. The banks practiced CSR by participating in tree planting as well as donating trees to the community, conducting charity walks to raise money that cater for different functions, provided bursaries and sponsorship for students who are gifted but in need being and carrying out talent search on business ideas and funding those with best ideas.

Sustainable risk management was moderately adopted by having in place a risk management culture that focuses on eliminating or reducing risk occurrence, complying with all the set statutory regulations like ISO Certification to avoid fines and lawsuits, collaborating with supply chain partners in ensuring that they obtain what they need and transferring their risks through insurance which cushions them on financial losses. Sustainable financing was adopted to a medium extent by the banks provision of unsecured loans in support of small businesses, only purchasing what is needed, necessary and within the budget and carrying out regular financial audits for transparency and accountability purposes.

On establishing the association between sustainable supply chain and operational efficiency of commercial banks, a mixed outcome was experienced. Sustainable procurement, sustainable innovations and sustainable risk management were established to have a correlation and thus influenced operational efficiency. Corporate social responsibility and sustainable financing were found to have no association and thus had no influence on operational efficiency. The adoption of Sustainable procurement,

sustainable innovations and sustainable risk management were found to minimize interest rates on loan, reduce ATM withdrawal charges, minimized money transfer charges and cost of operations, reduced complaints from clients, enhanced privacy of customer information, minimized rate of timely clearing cheque, enhanced timely service delivery as well as reduced queuing time in banking halls.

### 5.3 Conclusions

The outcome of the research revealed that all the sustainable supply chain practices; sustainable procurement, sustainable innovations, corporate social responsibility, sustainable risk management, sustainable financing were moderately adopted by the commercial banks. Therefore, the paper concludes that the commercial banks in Kenya have adopted Sustainable procurement, sustainable innovations, corporate social responsibility, sustainable risk management, sustainable financing to a medium extent albeit with differences in margins. The study also concludes that cost, quality and timeliness of commercial banks were moderately impacted by sustainable supply chain practices' adoption.

The study also established a mixed outcome on the association between sustainable supply chain practices and operational efficiency of commercial banks. Sustainable procurement, sustainable innovations and sustainable risk management were established to have a correlation and thus influenced operational efficiency. Corporate social responsibility and sustainable financing were found to have no association and thus had no influence on operational efficiency of commercial banks in Kenya. The outcome thus concludes that different sustainable supply chain practices influences entity's efficiency

differently and that not all the adopted sustainable supply chain practices influences operational efficiency. It is thus concluded that the study achieved a mixed outcome on the correlation and impact of sustainable supply chain practices on operational efficiency of Kenyan commercial banks.

### 5.4 Recommendations

As per the outcome, the study recommends the adoption of sustainable supply chain practices by commercial banks as it was found to impact operational efficiency. Specifically, the research suggests that commercial banks should largely implement sustainable procurement, sustainable innovations and sustainable risk management as they have been affirmed to influence operational efficiency of Kenyan banks.

The study recommends the adoption of sustainable procurement as it was found to impact operational efficiency of commercial banks. It is also suggested that the commercial banks ought to largely adopt sustainable procurement since it was moderately adopted yet it is beneficial to the firms. Sustainable purchasing enhances the procurement processes and practices by ensuring that what they procure is sustainable and have minimal impact on the environment. Purchasing sustainably is vital to an entity as they competitively source for their products and services by competitive bidding thus saving on cost and ensure the acquisition of exactly what is needed. The business that select vendors that can be accessible at all times in the neighborhood minimally impact the ecology negatively as their carbon footprints are minimized.

Sustainable innovation should also be employed largely by the commercial banks as they were moderately implemented yet they were found to influence operational efficiency.

Sustainable innovation is vital to an entity as it reduces negative environmental impacts as well as aid firms in staying ahead of competitors. Engaging in sustainable innovations like energy saving strategies and use of solar panel systems (solar energy) and transparent windows/walls to capitalize on natural lighting during the day and are crucial in saving power consumption which ultimately reduces electricity cost. The use of innovations like vacuum cleaning saves on use of natural resources like water. Installation of sensors both in lighting and water ensure that water and electricity are only used when necessary thus aiding in environmental conservation, cost minimization and efficiency.

Lastly, the study recommends full adoption of sustainable risk management as it was moderately adopted yet it impacts operational efficiency. Sustainable risk management is crucial for an entity as they are able to device strategies that manages risk that they may be able to face, and in so doing, they will be in a better position to know how to deal with the risk and in so doing, they will be able to save on cost that they would otherwise have incurred had they not prepared for the risks. Entities may benefit from managing their risks by transferring their risks through insurance and thus cushion them through financial losses and entities that manages their risks by complying with all the set statutory regulations benefit by avoiding fines and lawsuits which are cost that may be avoided and thus saved to be used on daily operations of the firm which may also be passed onto the clients as dividends

### 5.5 Suggestions for Future Research

The key focus of the study was ascertaining the association amongst sustainable supply chain practices and operational efficiency of commercial banks. The study focused on

Sustainable procurement, sustainable innovations, sustainable risk management, corporate social responsibility and sustainable financing and their influence on operational efficiency. The outcome of the paper indicated that sustainability practices attributed to 82% of operational efficiency and the residual 18% couldn't be explained due to other factors. Future research may capitalize on this gap and embark on the journey of determining these other factors which were not covered in the study that impacts operational efficiency.

The focus was limited to Kenyan commercial banks and thus future studies may explore different sectors and context while maintaining the same concepts. Lastly, the only sustainability practices covered were sustainable procurement, sustainable innovations and sustainable risk management, corporate social responsibility and sustainable financing. Further research may focus on other sustainability practices not covered and determine their impact on operational efficiency of commercial banks.

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# APPENDICES

## APPENDIX I: INTRODUCTION LETTER


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Our Ref: **D67/22239/2019**

**November 3, 2023**

**TO WHOM IT MAY CONCERN**

**RE: INTRODUCTION LETTER- GLADYS KANYAA MWENDWA**

The above named is a registered Master of Science in Supply Chain Management student at the Faculty of Business and Management Sciences, University of Nairobi. She is conducting research on **"Sustainable Supply Chain Practices and Operational Efficiency of Commercial Banks in Kenya".**

The purpose of this letter is to kindly request you to assist and facilitate the student with necessary data which forms an integral part of the thesis.

The information and data required is needed for academic purposes only and will be treated in **Strict-Confidence**.

Your consideration will be highly appreciated.

**Prof. Joshua Wanjare**
**Associate Dean, GBS & R**
**Faculty of Business and Management Sciences**

*JW/pgr*

# APPENDIX II: QUESTIONNAIRE

The purpose of the instrument is to ascertain the impact of **SUSTAINABLE SUPPLY CHAIN PRACTICES AND OPERATIONAL EFFICIENCY OF COMMERCIAL BANKS IN KENYA.** Kindly avail the needed response by filling the most suitable feedback. Your feedback will go a long way and appreciated.

**SECTION A: Demographic Details**

1. Kindly indicate your job position.

a. Supply chain manager [ ]
b. Finance Manager [ ]
c. Supply chain/ Finance officer [ ]

2. Provide your highest educational level

d. Certificate [ ]
e. Diploma [ ]
f. Degree [ ]
g. Post Graduate [ ]

3. The years you have worked for your Bank

a. One – two years [ ]
b. Three – Five years [ ]
c. Six -Ten years [ ]
d. Above ten years [ ]

4. Period of existence of this Bank in Nairobi

a. Below Five years [ ]
b. Six – ten years [ ]
c. Above Ten years [ ]

**SECTION B: Extent of adaptation of Inventory Control Strategies**

5. The research was geared at determining the adoption level of Sustainable SC Management. Subsequently provided are some of the practices adopted by entities that uses Sustainable SCM. Please indicate the level to which they have been implemented by your Banks. Please rate on a scale of 1-5; (where: 1- to a very small extent, 2- to a small extent, 3- to medium extent, 4- to a large extent and 5- to very large extent). Tick as appropriate.

| SUSTAINABLE SUPPLY CHAIN MANAGEMENT | RATINGS | | | | |
|---|---|---|---|---|---|
| **Sustainable procurement** | **1** | **2** | **3** | **4** | **5** |
| The entity acquires commodities with minimal ecological impact | | | | | |
| The bank competitively source for their products and services by competitive bidding | | | | | |
| The banks purchase their commodities from local vendors | | | | | |
| The firm has put in place and embraced electronic procurement methods whereby all the procurement process are done electronically | | | | | |
| Most of the communication are done electronically via mails and on website | | | | | |
| **Sustainable Innovations** | **1** | **2** | **3** | **4** | **5** |
| The entity engages in research and development to remain innovative | | | | | |
| The bank has installed solar panels systems (solar energy) and transparent windows/walls to capitalize on natural lighting during | | | | | |
| The entity uses Vacuum cleaners to carry out their cleaning | | | | | |
| The entity has put in place sensors in electricity and water so as to save on water and electricity by using it only when needed | | | | | |
| The entity has embraced paperless banking whereby they use digital banking application, phone banking and provision of electronic annual reports | | | | | |
| The entity has automated all their processes to enhance efficiency | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| and minimize duplication of roles | | | | | |
| **Corporate Social Responsibility** | **1** | **2** | **3** | **4** | **5** |
| The entity participates in tree planting as well as donates trees to the community | | | | | |
| Charity walks are conducted to raise money that cater for different functions | | | | | |
| The entity provides bursaries and sponsorship of students who are gifted but in need | | | | | |
| The entity carries out Trainings and seminars on different issues that affect the communities and how they can better themselves | | | | | |
| The entity carries out talent search on business ideas and funds those with best ideas | | | | | |
| **Sustainable Risk Management** | **1** | **2** | **3** | **4** | **5** |
| The entity has in place a risk management culture that focuses on eliminating or reducing risk occurrence | | | | | |
| The entity complies with all the set statutory regulations like ISO Certification to avoid fines and lawsuits | | | | | |
| The entity collaborates with supply chain partners in ensuring that they obtain what they need | | | | | |
| The bank transfers their risks through insurance and which cushions them on financial losses | | | | | |
| The bank has a risk management department that focuses on risk occurrences and finds a advices on a proper way of combatting the risk | | | | | |
| **Sustainable Financing** | **1** | **2** | **3** | **4** | **5** |
| The bank provides unsecured loans in support of small businesses | | | | | |
| The banks only purchase what is needed, necessary and within the budget | | | | | |
| The banks carry out regular financial audits for transparency and accountability purposes | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| The entity carries out talent search on business ideas and funds those with best ideas | | | | | |
| The entity only funds projects that are sustainable and has minimal impact on the environment | | | | | |
| The entity competitively source for their commodities to save on cost | | | | | |

Others (please specify)

…….....
.....

**SECTION C: Sustainable SCM and Operational Efficiency**

5. The paper aimed at ascertaining the association among Sustainable SCM and operational efficiency. Listed are statements on Operational Efficiency results upon the adoption of Sustainable SCMP. Kindly provide your concurrence to the listed outcomes using the scale of 1 – 5.

| **Statement** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **COST** | | | | | |
| The firm has minimized interest rates on loan | | | | | |
| The banks have reduced ATM withdrawal charges | | | | | |
| There is reduced bank statement charges | | | | | |
| The firm has experienced minimized money transfer charges | | | | | |
| Minimized cost of operations | | | | | |
| **QUALITY** | **1** | **2** | **3** | **4** | **5** |
| The bank has experienced reduced complaints from clients | | | | | |
| The banks have come up with convenience banking techniques to clients | | | | | |
| The firm has enhanced Privacy of customer information | | | | | |
| The banks offer quality services to its clients | | | | | |
| The entity ensures that there is enhanced customer satisfaction levels | | | | | |
| **TIMELINESS** | **1** | **2** | **3** | **4** | **5** |

| | | | | | |
|---|---|---|---|---|---|
| The firm has enhanced minimized rate of timely clearing cheque | | | | | |
| The timely responds to client's complaints | | | | | |
| The entity has experienced timely service delivery | | | | | |
| The firm has reduced queuing time | | | | | |
| The entity has minimized loan approval time | | | | | |
| **The entity has experienced timely payment of dividends** | | | | | |

**Others**

*Gratitude for your assistance*

# APPENDIX III; LIST OF COMMERCIAL BANKS

| | |
|---|---|
| 1. Absa Bank of Kenya | 23. Guaranty Trust Bank Ltd |
| 2. African Bank of Kenya | 24. Guardian Bank |
| 3. Bank of Africa | 25. Gulf African Bank |
| 4. Bank of Baroda | 26. Habib A.G. Zurich |
| 5. Bank of India | 27. Habib Bank (K) Ltd |
| 6. CFC Stanbic | 28. Housing Finance |
| 7. Charterhouse Bank Ltd | 29. I & M Bank |
| 8. Chase Bank | 30. Imperial Bank |
| 9. Citi Bank | 31. Jamii Bora Bank |
| 10. Consolidated Bank | 32. Kenya Commercial Bank |
| 11. Co-operative Bank of Kenya | 33. Middle East Bank |
| 12. Credit Bank | 34. National Bank of Kenya |
| 13. Development Bank of Kenya | 35. NCBA Bank |
| 14. Diamond Trust Bank | 36. Oriental Commercial Bank |
| 15. Dubai Bank | 37. Paramount Universal Bank |
| 16. Eco Bank | 38. Prime Bank |
| 17. Equatorial Commercial Bank | 39. Sidian Bank |
| 18. Equity Bank | 40. Standard Chartered Bank |
| 19. Family Bank | 41. Trans-National Bank |
| 20. Fidelity Commercial Bank | 42. UBA Bank Ltd |
| 21. First Community Bank | 43. Victoria Commercial Bank |
| 22. Giro Commercial Bank | |

**Source;** CBK (2022)