INFLUENCE OF CULTURAL DIMENSIONS ON SUSTAINABLE SUPPLY CHAIN PERFORMANCE: THE MODERATING ROLE OF GREEN SUPPLY CHAIN PRACTICES AMONG MANUFACTURING SMES IN NAIROBI

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DECLARATION

I declare that this work has not been submitted or approved for a degree at this university or any other institution. To the best of my knowledge, this thesis does not include any material previously published or authored by someone else, except where proper citations are provided within the project.

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ABSTRACT

Given the rapidly evolving global business environment, cultivating sustainability-focused cultures is crucial for integrating sustainability into all levels of the organization. This study examined the influence of cultural dimensions on sustainable supply chain performance under the moderating role of green supply chain practices among manufacturing SMEs in Nairobi. Grounded in stakeholder and resource dependence theory, the research adopts a quantitative approach through a descriptive cross-sectional survey, drawing responses from 233 SMEs registered with the Kenya Association of Manufacturers. Using structured questionnaires, the study targeted supply chain and operations managers, with data analyzed through descriptive statistics and multiple regression techniques. The study revealed that both power distance and individualism significantly and positively influence sustainable supply chain performance among manufacturing SMEs in Nairobi. However, the moderating role of green supply chain practices was found to be statistically insignificant, with the interaction between power distance and GSCPs and between individualism and GSCPs showing no meaningful effect. These findings suggest that cultural dimensions directly drive SSCP, while GSCPs strengthen overall practices without significantly altering cultural effects. Individualism emerged as the stronger driver of sustainability by promoting innovation and independent decision-making, while power distance supported compliance and structured execution when balanced appropriately. Although green supply chain practices did not significantly moderate the cultural effects, they remained critical in enhancing overall SSCP. Therefore, SMEs should align their cultural traits with structured green supply chain practices to maximize environmental, social, and economic performance. These insights contribute to the growing discourse on sustainable supply chain management, providing practical recommendations for practitioners, researchers, and policymakers.

Keywords: Green Supply Chain, Individualism, Performance, Power Distance, Sustainable Supply Chain

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

GSPCs	Green Supply Chain Practices
IDV	Individualism
KMO	Kaiser-Meyer-Olkin Measure
PD	Power Distance
OC	Organizational culture
RDT	Resource Dependency Theory
SC	Supply Chain
SCM	Supply Chain Management
SSC	Sustainable Supply Chain
SSCP	Sustainable Supply Chain Performance
SSCM	Sustainable Supply Chain Management
SMEs	Small and Medium Enterprises

DEFINITION OF TERMS

Power Distance: The unequal power distribution (Hofstede et al. 2010).

Individualism is a characteristic of societies where the connections between individuals are weak, and there is an expectation for people to care for themselves or their immediate family (Hofstede, 1991).

Green Supply Chain Practices: The strategies and actions organizations implement to integrate environmental considerations into their supply chain management processes. (Green et al. 2012)

Sustainable supply chain performance: The management of materials, information, and capital flows, along with collaboration among companies throughout the supply chain, must consider the objectives of all three dimensions of sustainable development: economic, environmental, and social, based on the needs of customers and stakeholders. (Seuring & Müller, 2008)

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May the blessings of our God Almighty be with you.

DEDICATION

I dedicate this thesis to my parents, Samuel Waweru and Alice Waweru, and my sister, Jacquiline Waweru, for their prayers, love, and unwavering support.

CHAPTER ONE

INTRODUCTION

1.1: Background of the Study

The complex nature of culture, sustainability, and organizational behaviour is woven into the dynamics of modern supply chains. Organizational culture (OC) is crucial in successfully implementing sustainability initiatives within SCs. Developing a sustainability-oriented culture is essential for integrating sustainable practices across all organizational levels. Hofstede (2011) states that culture is the shared conditioning of the mind that differentiates members of one group from another. It can also be understood as the unwritten rules of the social game that guide organizational behaviours (Panocová, 2020). Matusitz & Musambira, (2013) explain that culture is deeply embedded in the unconscious mind, affecting what individuals consider positive or negative, conventional or unconventional, ethical or unethical.

According to Hofstede (2011) OC manifests in visible and conscious practices, influencing how people recognize their organizational environment. In 1980, psychologist Dr. Geert Hofstede introduced his four cultural dimensions, which differentiate cultures based on a study of IBM employees. These dimensions include power distance (PD), which addresses the various approaches to human inequality; individualism versus collectivism, which pertains to how individuals are integrated into primary social groups; masculinity versus femininity, which examines the emotional role distribution between genders; and uncertainty avoidance, which reflects the societal stress levels in the face of an uncertain future (Hofstede, 1991). In 1991, a fifth dimension, long-term orientation, was added, contrasting with short-term orientation, and it focuses on whether people prioritize future goals or present and past concerns (Minkov & Hofstede, 2012). In 2010, Hofstede, in collaboration with Michael Minkov, introduced a sixth dimension: indulgence versus restraint, which relates to the balance between the gratification and control of basic human desires associated with enjoying life (Minkov & Hofstede, 2012).

Kucharska and Kowalczyk (2019), OC is gaining eminence in the SC literature as a basis for explaining how organizations could enhance their SSCP. This research adopted the aspect of PD and individualism to study about SSCP because as Khatri (2009) explained the cultural dimensions of PD and individualism, influence employee behaviour, organizational structure, and processes. In addition, Sedita et al. (2022) concluded that the cultural dimensions of

Hofstede, PD, and individualism are the significant factors affecting SSCP. In high PD cultures, where centralized decision-making may hinder innovation and flexibility crucial for sustainability, employees are less likely to propose or engage with green supply chain practices, particularly in rigid structures that restrict open communication and inclusivity. Research by Sedita et al. (2022) highlights how lower PD correlates with enhanced innovation and inclusiveness, which are necessary for implementing sustainability efforts effectively. In individualistic cultures, employees are expected to employ proactive, independent problem-solving, particularly in green procurement or eco-design contexts. Sedita et al. (2022) further emphasize that individualism positively correlates with sustainability, as employees take personal ownership of green supply chain practices .

This research was underpinned by stakeholder theory and resource dependence theory (RDT), which collectively provide a robust framework for understanding the dynamics of PD, individualism and sustainable supply chain performance (SSCP). Stakeholder theory, emphasizes the importance of balancing the interests of diverse stakeholders, including employees, customers, suppliers, and communities, to achieve long-term sustainability (Freeman et al., 2018). RDT, on the other hand, focuses on how organizations strategically manage external dependencies to access critical resources necessary for sustainability (Carter & Rogers, 2008). These theories are particularly relevant in high PD contexts where hierarchical decision-making may exclude lower-tier stakeholders from participating in sustainable supply chain (Hörisch et al., 2014). On the contrary, in individualistic settings, stakeholder engagement tends to foster innovation and inclusivity, promoting sustainable outcomes.

High PD environments often face challenges in decentralizing decision-making and fostering collaboration among stakeholders, making Green Supply Chain Practices (GSCPs) vital in addressing these limitations (Osobajo et al., 2023). For instance, green procurement ensures that sustainability standards are upheld across the supply chain (SC), while eco-design promotes resource efficiency and waste reduction. Individualism, characterized by autonomy and innovation, further enhances the effectiveness of GSCPs by encouraging creative approaches to sustainability challenges. However, the adoption of these practices requires robust institutional frameworks and stakeholder alignment to ensure consistent implementation. In manufacturing SMEs, where resources are often constrained, the integration of GSCPs can mitigate environmental impacts while fostering economic and social sustainability, highlighting their critical moderating role in SSCP.

The interaction between PD, individualism, GSCPs, and SSCP is particularly relevant in the manufacturing sector of developing economies like Kenya. High PD in such contexts often limits participatory decision-making, while individualistic tendencies can drive entrepreneurial solutions to sustainability challenges (Hofstede Insights, 2020). This study highlighted the importance of aligning cultural dimensions with green practices to address these challenges and achieve long-term SSCP.

Recent local and regional research highlights the increasing uptake of sustainable practices among African SMEs. For instance, Ngugi and Obuya (2023) found that Kenyan manufacturing SMEs implementing structured sustainability practices, such as green procurement and waste management, significantly improved their long-term viability and compliance with environmental regulations. Similarly, Prakash et al. (2024) emphasized that African SMEs adopting green supply chain practices reported better brand positioning and access to new markets. These findings reinforce the relevance of this study in contextualizing cultural dimensions within practical sustainability adoption efforts in Nairobi.

1.1.1: Power Distance and Individualism Cultural Context Dimensions

1.1.1.1: Power Distance

In 1980, Hofstede characterized PD as the degree to which individuals, organizations, and societies tolerate inequality in power, status, and wealth.

Hofstede drew on the earlier work of Dutch experimental psychologist Mauk Mulder, who in 1977 defined PD as the extent of power disparity between a less powerful individual and a more powerful counterpart within the same social system (Khatri, 2009). Hofstede elaborated on Mulder's concept, describing PD in 1997 as the extent to which less powerful members of an institution expect and accept unequal power distribution. For this research, PD will be defined simply as unequal power distribution (Hofstede et al. 2010).

Vachon (2010) critically argues that organizations with a high PD tend to be more structured and have a heavier hierarchy, decisions are not based on merit but rather favoritism and loyalty, which leads to inequality. In addition, a higher acceptance of deplorable working conditions and polluted environments, absenteeism is considered a form of disrespect to supervisors. According to Erez (2010), higher PD often correlates with hierarchical organizational structures and centralized decision-making processes. In such environments, employees may

defer to authority and exhibit less initiative, which can impact innovation and responsiveness in SCM. In contrast, lower PD is associated with more egalitarian structures, encouraging open communication and participatory decision-making. Matusitz & Musambira (2013) allude that PD focuses on the predominant role of conformity practices, such as assessing what is acceptable to what is not, versus autonomy practices, being self-reliant, and acting on one's own free choice. Individuals in low PD societies or organizations are less inclined to obey rules and inclined to pursue their own goals.

In organizations, an employee's view of PD affects their attitude and behavior; those employees who perceive a high PD are obedient to their managers and show strong respect; these employees do not want to participate in decision-making, they show an obedient attitude; the work to be undertaken by these employees is defined, and they are given limited discretion (Uzun, 2020). Shaiq et al. (2011) point out that PD can be determined by the hierarchical level in an organization, employee voice, and feedback mechanisms, that is, the openness to employee feedback and the distance between the social classes.

GLOBE's research project (House et al. 2004) further refined the understanding of power distance by incorporating societal values. Their findings revealed significant variations in power distance across countries, affecting leadership styles, team dynamics, and employee motivation within manufacturing SMEs. In high power distance manufacturing firms, leadership tends to be autocratic, with supervisors closely monitoring workers' performance. This approach often ensures compliance but may stifle creativity and proactive problem-solving. In contrast, low power distance SMEs encourage collaborative practices, enabling teams to take ownership of processes and innovate solutions. These variations highlight the challenges manufacturing SMEs face in implementing leadership practices that align with their cultural and operational contexts.

Kim and Markus (1999), indicate that power distance influences shop-floor interactions and production management. In high power distance cultures, employees are less likely to question directives or propose changes, leading to a rigid adherence to established protocols. While this may enhance short-term efficiency, it can hinder adaptability to changing market demands. On the contrary, low power distance cultures promote open communication and collective problem-solving, which are essential for continuous improvement and lean manufacturing

practices. These differences have significant implications for how manufacturing SMEs adopt global production standards and technologies while maintaining cultural harmony.

Gudykunst and Ting-Toomey (2018) emphasized how power distance shapes communication styles within organizations. In high power distance contexts, communication typically flows in a top-down manner, with limited channels for upward feedback. This structure can result in delayed responses to operational challenges and reduced efficiency in addressing production issues. Conversely, low power distance manufacturing firms encourage bidirectional communication, fostering a culture where workers feel empowered to share ideas and report problems promptly. These differences are critical when designing communication strategies that enhance operational effectiveness. Dickson, Den Hartog, and Mitchelson (2023) noted that transformational leadership is more effective in low power distance manufacturing firms due to its emphasis on collaboration and empowerment. Such leadership styles resonate with egalitarian values, enhancing innovation and team cohesion. However, in high power distance settings, transactional leadership often aligns better with the structured and hierarchical nature of manufacturing operations. These findings underscore the need for culturally adaptive leadership styles that balance operational control with employee empowerment in manufacturing SMEs.

Cultural dimensions, including power distance, have profound implications for conflict resolution and negotiation strategies in manufacturing SMEs. Ting-Toomey (1999) found that individuals from high PD cultures often rely on indirect methods and third-party mediators to resolve workplace conflicts, preserving hierarchical relationships. This approach, while minimizing overt confrontation, can lead to prolonged resolution timelines. Contrarywise, low power distance manufacturing firms emphasize direct negotiation and collaborative problem-solving, fostering quicker resolutions and better team cohesion. Understanding these dynamics is essential for managing conflicts effectively in culturally diverse manufacturing environments. The degree of formal supervision, acceptance of autocratic leadership, and the frequency of top-down decision-making approach (Bochner & Hesketh, 1994). In addition, higher levels of PD in an organization often correspond to lower employee autonomy, less participation in decision-making, and less innovation, as lower-ranked employees are expected to follow directives (Matusitz & Musambira, 2013).

The power distance measures chosen for this study, which encompass hierarchical levels, employee voice, feedback mechanisms, degree of formal supervision, acceptance of autocratic leadership, and frequency of top-down decision-making, are essential for thoroughly comprehending their implications on sustainable supply chain performance (SSCP). Recent studies affirm that high power distance often limits employee autonomy and innovation due to centralized decision-making and restricted feedback channels, which can hinder the implementation of SSCP (Huang et al., 2020; Luo et al., 2021). Low PD fosters an inclusive culture characterized by participatory decision-making and open communication, which is vital for driving green supply chain practices and enhancing SSCP (Nguyen & Kock, 2021).

By focusing on these specific indicators, this research aimed to provide nuanced insights into how power dynamics can impede or facilitate the adoption of sustainable supply chain, thus offering actionable recommendations for improving sustainable performance in manufacturing SMEs in Nairobi .

1.1.1.2: Individualism

Individualism reflects the degree to which individuals prioritize personal goals over group objectives (Hofstede, 1991). This concept has significant implications for supply chain performance, as it shapes decision-making, collaboration, and operational efficiency. In highly individualistic cultures, SC participants often focus on achieving their individual targets, which can lead to a fragmented approach to SC integration. On the other hand, less individualistic or collectivist cultures prioritize group cohesion and mutual benefits, fostering a more collaborative supply chain network (Nguyen et al. 2021). This study defines individualism as a characteristic of societies where the connections between individuals are weak, and people are expected to care for themselves or their immediate family (Hofstede, 1991).

Individualistic cultures tend to promote direct communication styles, with stakeholders openly expressing their opinions and preferences (Memon et al. (2020). While this transparency can enhance clarity in contractual negotiations and goal setting, it may also lead to conflicts when priorities differ. On the contrary, in less individualistic cultures, stakeholders may adopt indirect communication styles to preserve relationships, which can reduce friction but potentially delay decision-making processes critical to SSCP.

The role of trust in SC relationships is also influenced by individualism. Li et al. (2021) highlighted that in individualistic settings, trust is often built on formal agreements and

measurable performance metrics. This transactional approach ensures accountability but may limit the development of deeper relational trust. In contrast, collectivist cultures rely on interpersonal relationships and shared values to build trust, often resulting in stronger long-term partnerships. Both approaches have implications for supply chain resilience and adaptability, particularly in addressing disruptions.

Individualism significantly impacts supplier-buyer relationships, a cornerstone of SSCP. Individualistic cultures often emphasize competitive advantage, with suppliers and buyers focusing on securing the best possible terms for themselves.

While this can drive innovation and efficiency, it may also foster adversarial relationships that hinder collaboration (Wang & Zhou, 2022). Collectivist cultures, by contrast, emphasize mutual support and shared success, which can lead to more integrated and harmonious supply chain operations. These dynamics influence contract negotiations, risk-sharing, and the ability to achieve supply chain objectives. Decision-making processes within supply chains are deeply affected by individualism. In highly individualistic cultures, decision-making tends to be decentralized, with stakeholders having greater autonomy to make choices that align with their personal goals or departmental priorities.

While this can expedite localized decision-making, it may lead to inconsistencies across the supply chain (Singh et al. 2022). Conversely, less individualistic cultures often centralize decision-making to ensure alignment with collective goals, which can enhance coordination but may slow down responsiveness. Collaboration across supply chain partners is another area where individualism plays a crucial role. Individualistic cultures often prioritize individual accountability and reward systems, which can drive high performance at the organizational level but may discourage information sharing and joint problem-solving across the supply chain. Collectivist cultures, by emphasizing group rewards and shared accountability, tend to promote collaboration and resource sharing, enhancing overall supply chain efficiency and effectiveness (Chen et al. 2023).

Zhao et al. (2023) asserts that individualistic cultures, with their focus on personal achievement and competition, often lead the way in adopting cutting-edge technologies to gain a competitive edge. This proactive approach can enhance supply chain agility and responsiveness. However, the lack of a collaborative mindset may limit the full potential of these technologies, as integration across the supply chain network may be weak. In contrast, collectivist cultures may

adopt a more cautious approach but focus on technologies that strengthen group cohesion and collective performance (Zhao et al. 2023).

Employee engagement and motivation within supply chains are affected by the degree of individualism. Individualistic cultures often reward individual accomplishments, which can motivate employees to excel in their roles. However, this focus on personal achievement may undermine teamwork and cooperation. In individualistic cultures, negotiations are often transactional, focusing on maximizing individual gains (Lee & Park, 2022).

Fok et al. (2016) postulate that employees from individualistic countries are more calculative and utilitarian because, in individualistic cultures, people are considered independent and possess an exclusive pattern of traits that gives them global and abstract descriptions and definitions of themselves. In addition, individualistic cultures stress being 'honest' to one's unique set of needs and desires, and that is why they are expected to be consistent in their views and maintain them in the face of opposition. Edgar H. Schein and Peter Schein (2017) explain that individualistic societies define roles in terms of individual accomplishment, license aggression through personal competition, and place a high premium on ambition. According to Schein (2017), employees in individualistic settings are more willing to experiment with and adopt new sustainability solutions, such as energy-efficient manufacturing processes and recyclable material use. Recognizing individual contributions to sustainability efforts is a key motivating factor in individualistic environments.

Key measures include the level of autonomy, personal goal-setting tendencies, openness to innovation, and individualized reward systems (Goncalo & Staw, 2006). These measures foster a culture conducive to GSCPs by promoting proactive engagement in SSCP. As individualistic cultures focus on self-driven goals, understanding these measures will highlight how autonomy and personal initiative contribute to or hinder sustainable practices (Fan & Zhang, 2016). Scholars have demonstrated that GSCPs can moderate the cultural dimensions of PD, individualism, and SSCP. For example, Zhu and Sarkis (2004) show that GSCPs improve SSCP by providing a clear environmental framework. Green et al. (2012) further highlight that GSCPs enhance organizational alignment with sustainability goals in diverse cultural contexts.

1.1.2: Sustainable Supply Chain Performance

At a given point in the history of the world, sustainability was unfathomable compared to today, when the concept is ubiquitous (Caradonna, 2022).The modern concept of sustainability began to gain prominence with the Brundtland Commission of 1987, which defined sustainability as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Elsawy & Youssef, 2023).

Although earlier philosophical ideas, such as those by Aristotle, touched on ethical and natural balance, the contemporary understanding of sustainable development emerged much later. (Müller, 2011). Caradonna (2022) defined sustainability as a desire to create a safe, stable, successful, and ecologically minded society. Sustainability remains critical in light of changes in climatic conditions (Ortiz-Marcos et al. 2020). In an organizational context, it is understood as having an organization's long-term interests (Moisescu, 2018). The emphasis on sustainability within organizations stems from the belief that businesses need to tackle interconnected economic, environmental, and social issues across multiple levels (Stankevičiute & Savanevičiene, 2018). If an organization neglects the issue of sustainability, as Zheng et al. (2019) argue that, it will not only miss out on growth opportunities but also risk being eliminated from the market. Sustainability within the supply chain has emerged as a significant stakeholder concern (Dubey et al. 2017). Taghikhah et al. (2019) note that this heightened awareness is driven by rising environmental degradation linked to overconsumption, growing consumer demand for eco-friendly products, and stringent regulations. Furthermore, organizations have come to understand that embracing sustainability can provide competitive benefits, including improved brand reputation and attracting socially conscious consumers.

SC, according to McKinsey & Company (2022), is the integrated journey that raw materials, components, and goods take before their assemblage and sale to the customer; further, a SC is made of interconnected parts of a whole, all of which add up to finished products bought by the customer. Morana (2013) emphasizes that the scope of SC begins with the source of supply and ends at the point of consumption. Batista et al. (2023) describe supply chain management (SCM) as the strategic coordination and oversight of the various interconnected activities within an organization, including its personnel, information, processes, and resources. This encompasses the entire journey of a product or service, from raw materials to the final

consumer, to optimize efficiency, minimizing costs, and improving customer satisfaction. The primary objectives of effective SCM are to streamline operations, enhance quality, and ensure timely delivery, all while maintaining a balance between supply and demand.

The SSCP concept is gaining prominence as organizations focus on environmental issues and social pressures, such as social reputation and responsibility (Fan & Zhang, 2016). The notion of balancing environmental, economic, and social goals within supply chains aligns with the triple bottom line (TBL) framework introduced by Elkington (1997). This framework emphasizes that organizational success should not only be measured by economic profitability but also by its contributions to environmental stewardship and social well-being.

Traditionally, the importance of the supply chain (SC) in profit maximization cannot be ignored. However, due to the increasing global warming, managing SC in congruence with the environment as a strategic decision has gained prominence, mainly since the late 1980s and early 1990s, according to the United Nations Economic and Social Council & United Nations Office for ECOSOC Support and Coordination (2008). The rise of TBL thinking during this period further underscored the necessity for sustainability in SC management. Building on this, Carter and Rogers (2008) argued that sustainable supply chain performance must integrate all three dimensions of the TBL framework to achieve long-term viability. Miska et al. (2018) suggest that developing sustainability cultures is the first step in realizing SSCP.

SSCP offers numerous advantages, including cost savings from reduced packaging waste, improved working conditions, lower health and safety costs, reduced labour costs, proactive compliance with regulations, enhanced product quality, and improved reputation (Carter & Rogers, 2008). This aligns with Elkington's TBL framework, which posits that organizations that address ecological and social dimensions alongside economic goals can achieve a competitive edge in increasingly sustainability-conscious markets. Even though research on SSCP has been on the rise, no single agreed-upon definition has been developed. Seuring and Müller (2008) defined SSCP as the management of materials, information, and capital flows as well as collaboration among companies along the SC while taking goals from all three dimensions of sustainable development which environmental, economic, and social into account.

The environmental dimension addresses a company's ecological impact. It includes resource consumption, waste management, carbon emissions, and sustainable sourcing metrics (Carter

& Rogers, 2021; Sarkis Zhu & Lai, 2023; Seuring & Gold, 2023). Companies are expected to minimize their environmental footprint and engage in practices that protect and preserve the environment. (Yip et al. 2023). Environmental performance indicators include greenhouse gas emissions, where companies are encouraged to adopt energy-efficient technologies and shift to renewable energy to reduce their carbon footprint (Fahimnia et al. 2013; Zhu et al. 2008). Water usage is another important measure, particularly in high-demand industries, where businesses are urged to implement water-saving technologies and recycling systems to conserve resources (Kumar et al. 2023). Effective waste management, including recycling and reducing hazardous and non-hazardous waste, is essential to limit environmental damage (Shibin et al. 2020). Energy consumption remains central to sustainability, with companies transitioning from fossil fuels to renewable energy sources to enhance efficiency and reduce emissions (Srivastava, 2007).

Additionally, sustainable sourcing and minimizing the use of hazardous substances in production processes are key to reducing environmental risks and enhancing safety (Handfield et al. 2014; Fan & Zhang, 2016). Economic performance conversely focuses on the financial performance of a business. Varsei et al. (2014) allude to SC cost, which could include the cost of procurement, operating facilities and production, transportation and storage costs, SC revenue, and SC profit as the possible indicators of economic performance. Companies that integrate sustainability practices, such as energy-efficient technologies and optimized logistics, often achieve long-term cost reductions (Carter & Rogers, 2008). A critical measure of economic performance is the cost of compliance with environmental regulations. Companies that adopt sustainable practices often avoid penalties, reducing legal risks and costs (Sarkis et al. 2010). These economic performance measures demonstrate how sustainability can drive profitability and long-term business success.

There are often trade-offs between economic and environmental performance. For example, eco-friendly materials may incur higher costs; however, environmental performance can also enhance economic outcomes, particularly in recycling. Fan & Zhang (2016) suggest that to achieve a win-win scenario, management should assess their supply chain sustainability practices from an integrative perspective instead of facing trade-offs, striving for a balance between environmental preservation and cost-effectiveness. A sustainable economic model promotes the efficient allocation and fair distribution of resources (Fahimnia et al. 2015). Finally, the social dimension highlights the influence of an organization's activities on its

stakeholders. This aspect encompasses human rights, labour practices, community involvement, and overall social equity. Companies are urged to contribute positively to society and ensure equitable treatment for all stakeholders (Yip et al. 2023). Social issues can jeopardize a business's brand reputation while also affecting the economic stability of the supply chain and enhancing the market adaptability of products or services (Varsei et al. 2014). Fan and Zhang (2016) identify key indicators for evaluating social performance, including human rights, labour practices, decent work conditions, diversity and inclusion metrics, occupational health and safety, and fair-trade practices.

According to Shibin et al. (2020), measuring sustainability in SC is difficult since striking a balance between environmental, social, and economic issues involves a significant effort. However, Kumar et al. (2023) argue that organizations need to track their performance in the SC as businesses need to remain competitive and responsible in the twenty-first century, improve cost efficiency, reduce risks, and increase customer loyalty. Furthermore, Yip et al. (2023) contend that when the environmental, economic, and social aspects are prioritized equally, industries can more effectively evaluate their SSCP by creating and employing appropriate performance indicators. By aligning these pillars within supply chain management, businesses improve SSCP and create value that resonates across stakeholders, ensuring long-term organizational viability and societal well-being.

1.1.3: Green Supply Chain Practices

Green supply chain practices (GSCP) have emerged as a vital aspect of modern supply chain management, focusing on minimizing environmental impacts while maintaining operational efficiency. Srivastava (2007) defines GSCP as the integration of environmental considerations into supply chain management, including product design, material sourcing, manufacturing processes, and end-of-life disposal. Similarly, Sarkis et al. (2010) emphasize that GSCP involves adopting practices such as green procurement, reverse logistics, and waste reduction to achieve sustainability. Fahimnia et al. (2015) argue that GSCP not only reduces environmental footprints but also enhances organizational reputation and long-term profitability. According to Zhu and Sarkis (2016), effective implementation of GSCP requires collaboration across all stakeholders in the supply chain to ensure compliance with environmental regulations and meet growing consumer demands for eco-friendly products. These practices are increasingly recognized as essential for achieving a competitive edge in an era of heightened environmental awareness and regulatory pressures.

Green supply chain practices include green procurement, eco-design, and green manufacturing, which integrate environmental concerns into SC operations to enhance sustainability (Zhu & Sarkis, 2004). As a moderating variable, GSCPs influence how cultural traits shape SSCP, aligning organizational practices with environmental goals. Concerning PD, Sarkis et al. (2011) argue that lower-level employees may hesitate to suggest SSCP in high PD cultures due to fear of contradicting authority. However, GSCPs mandate top-down sustainability practices, ensuring that environmental goals are embedded in organizational strategy. Carter and Rogers (2008) highlight how green procurement and green manufacturing align hierarchical decision-making with sustainability, reducing barriers to innovation by institutionalizing green practices. Mensah et al. (2020) explain that decentralized structures can foster innovation but risk producing fragmented sustainability efforts. GSCPs, such as eco-design, help direct individual autonomy towards cohesive sustainability goals (Testa & Iraldo, 2010). This ensures that decentralized decision-making enhances SSCP without diluting environmental objectives.

In individualistic cultures, where personal autonomy and innovation are prioritized, GSCPs act as a framework to channel independent efforts toward common sustainability objectives. Husted (2005) argues that while individualism can foster creativity, it may also lead to disjointed sustainability efforts if not aligned with organizational goals. GSCPs, mainly green procurement and eco-design, offer a consistent framework that ensures individual contributions support broader environmental strategies (Zhu et al., 2008). Sedita et al. (2022) emphasize that GSCPs help maintain coherence in sustainability efforts by ensuring individual initiatives align with organizational sustainability objectives

By providing a structured approach, GSCPs enable organizations to overcome cultural barriers and achieve better SSCP outcomes (Sarkis et al., 2011; Mensah et al., 2020). This is particularly relevant for manufacturing small and medium enterprises (SMEs) in Nairobi, where the adoption of GSCPs could significantly influence their sustainability and competitive advantage.

1.1.4: Manufacturing Small and Medium Enterprises in Nairobi

Small and Medium Enterprises (SMEs) substantially contribute to the worldwide economy; hence, governments increasingly promote the development of these organizations with an appreciation of their role in the economy (Johnson & Schaltegger, 2016). The definition of SMEs has been explored by Policymakers and various attempts to explore the definition of SMEs have

resulted in approaches and understanding depending on different economies; thus, the concept varies from country to country (Ong'olo & Awino, 2013). According to the Sessional Paper on the Kenya Micro and Small Enterprises Policy from the Ministry of Industrialization, Trade and Enterprise Development of 2020, a small enterprise has an annual turnover between one million and five million Kenyan shillings and employs 10-100 people.

SMEs in developing countries play a crucial role in job creation despite facing challenges related to financing, production, human resource development, and marketing (Uwase, 2020). Nevertheless, these nations continue to prioritize the growth of SMEs by implementing policies designed to support their development. For instance, Kenya's Micro and Small Enterprises (MSE) Act of 2020 establishes a framework that fosters a conducive business environment, enabling SMEs to thrive and make significant socio-economic contributions by providing decent employment opportunities and high-quality products.

The Kenya Vision 2030 also aims to establish at least five SME industrial parks in major urban areas. Furthermore, in March 2021, the Kenyan Cabinet approved the National Waste Management Policy, followed by the enactment of the corresponding Act in 2022. This policy is intended to propel Kenya towards a more sustainable, circular, and green economy, ultimately working towards achieving the zero-waste principle (KAM, 2023). Nairobi is among the forty-seven counties in Kenya, the third smallest yet the most populated of the counties. It also serves as Kenya's capital city, the largest city, and an urban core. According to the Kenya Association of Manufacturers (KAM, 2023), there are 538 registered SMEs in Nairobi . These SMEs fall under different categories: Building, Mining and Construction, Electrical and Electronic, Chemical works, Energy, Leather and Footwear, Agriculture and Fresh Produce, Food and Beverages, Metalworks, Automotive, Paper and Board, Pharmaceuticals and Medical Equipment, Plastics and Rubber, Textiles and Apparel, and, Timer, Wood and Furniture.

1.2: Statement of the Problem

Despite the global shift towards sustainability, SMEs in developing economies like Kenya continue to struggle with sustainable supply chain performance. Nairobi 's manufacturing SMEs face significant challenges in integrating sustainable practices due to organizational and cultural barriers, which hinder their environmental, social, and economic performance (Baariu et al., 2021). Recent studies for example those of Adams & Kiptum (2023), and Wang et al. (2023), indicate that SMEs in emerging markets often lack the resources and frameworks

necessary to adopt SSCP effectively, exacerbating their struggles in balancing profitability with environmental stewardship. While existing research predominantly focuses on large organizations, SMEs, despite being the backbone of most economies, remain underrepresented in studies examining how cultural dimensions like PD and individualism influence SSCP (Osei et al., 2023). This oversight limits the development of tailored strategies for SMEs aiming to improve their SSCP.

Recent contributions by Prakash et al. (2024) highlight the growing awareness among SMEs of the competitive benefits of GSCPs, such as cost savings and improved brand reputation. Moreover, Ngugi and Obuya (2023) emphasize the need for government and private-sector collaborations to create supportive environments for SMEs to adopt sustainable practices. However, the moderating role of GSCPs in addressing cultural dimensions like PD and individualism remains underexplored. This gap highlights the necessity for research that links cultural influences with structured SSCP in diverse organizational contexts (Prabowo et al., 2022; Ahmed et al., 2023).

Understanding the interplay between cultural dimensions and SSCP in SMEs is crucial for fostering a practical framework that aligns with their unique constraints and opportunities. This study aimed to bridge existing gaps by exploring the moderating role of GSCP in the relationship between PD, individualism, and SSCP in Nairobi 's manufacturing SMEs. Specifically, the study delved into how GSCPs can mitigate the adverse effects of high PD while enhancing the positive impacts of individualism, thereby enabling SMEs to achieve a high sustainable supply chain performance.

1.3: Objectives of the Study

1.3.1: General objective of the study

The study examined the influence of cultural dimensions on the Sustainable Supply Chain Performance of manufacturing SMEs in Nairobi, moderated by Green Supply Chain Practices.

1.3.2: Specific Objectives

(i) To determine the relationship between Power Distance and Sustainable Supply Chain Performance of manufacturing Small and Medium Enterprises in Nairobi, Kenya.

(ii) To determine the relationship between individualism and Sustainable Supply Chain Performance of manufacturing Small and Medium Enterprises in Nairobi, Kenya

(iii) To examine the moderating role of green supply chain practices on the relationship between power distance, individualism and sustainable supply chain performance of manufacturing Small and Medium Enterprises in Nairobi , Kenya.

1.4: Research Questions

(i) What is the relationship between Power Distance and Sustainable Supply Chain Performance of manufacturing Small and Medium Enterprises in Nairobi, Kenya?

(ii) What is the relationship between individualism and Sustainable Supply Chain Performance of manufacturing Small and Medium Enterprises in Nairobi, Kenya?

(iii) What is the moderating role of Green Supply Chain Practices in the relationship between the Power Distance, individualism and Sustainable Supply Chain performance of manufacturing Small and Medium Enterprises in Nairobi, Kenya?

1.5: Significance of the Study

Dey et al. (2021) suggest that research on SSCP among manufacturing SMEs enhances business viability not only from an economic standpoint but also from environmental and social perspectives. Consequently, this study aimed to deepen the understanding of how PD and Individualism within organizations affect the implementation of sustainability initiatives. By examining the moderating role of GSCPs, the research has provided practical recommendations for SMEs in Nairobi to align their cultural traits with sustainability objectives, ultimately improving their overall supply chain performance.

1.5.1: Researchers and Academicians

From a scholarly perspective, this study has contributed to the existing body of literature by exploring an under-researched area on the moderating role of GSCPs in the relationship between cultural dimensions and SSCP. This contribution offers scholars new insights into the dynamics of sustainability in SMEs, paving the way for future research on cultural influences and practical frameworks for sustainability. These findings align with recent African studies for example (Osei et al., 2023; Ngugi & Obuya, 2023), supporting the need for more localized research that reflects regional realities and sustainability opportunities for SMEs.

1.5.2: Supply Chain Operations Managers

For managers in supply chain operations, the findings have provided actionable strategies to leverage cultural dimensions, such as mitigating the adverse effects of high PD and fostering innovation through individualism. These strategies will assist managers in integrating GSCPs into their operations, thereby enhancing SSCP and achieving long-term competitiveness in a rapidly evolving business environment.

1.5.3: Policy Makers and Regulators

Policy makers and regulators have benefited from the study's recommendations on creating supportive environments for SMEs to enhance sustainable performance. The findings will guide the development of policies and incentives that address cultural barriers while promoting GSCP adoption. Such measures will help regulators foster a more conducive business environment that supports SMEs in meeting sustainability goals while contributing to national and global sustainability targets.

Finally, this study sought to create a multi-faceted impact, offering value to scholars, practitioners, and policymakers alike by addressing critical gaps in the literature and providing practical and policy-relevant insights to enhance SSCP among manufacturing SMEs in Nairobi.

1.6: Scope of the Study

This study focused on the impact of power distance (PD) and individualism on sustainable supply chain performance (SSCP) within manufacturing SMEs in Nairobi , with green supply chain practices (GSCPs) serving as a moderating factor. To anchor the study on a solid theoretical framework, the stakeholder and resource dependency theories were used. The study was geographically limited to Nairobi , Kenya, data was collected from a sample of 233 SMEs selected from a population of 538 manufacturing SMEs registered with the Kenya Association of Manufacturers (KAM, 2023). These SMEs represent a critical segment of the local economy and are pivotal in understanding the interplay of cultural dimensions and sustainability in emerging markets.

The research adopted a quantitative approach using a descriptive research design to examine the relationships among the identified variables. The target population consisted of owners and operations or supply chain managers within the selected SMEs. The participants were selected using stratified random sampling, and data was collected through structured questionnaires to ensure consistency and reliability in capturing relevant insights.

The study focused on three key variables: power distance and individualism as independent variables, sustainable supply chain performance (SSCP) as the dependent variable, and green supply chain practices (GSCPs) as the moderating variable. The research sought to analyze how PD and individualism influence SSCP and how GSCPs mediate these effects, offering actionable insights for improving SSCP in manufacturing SMEs.

1.7: Chapter Summary

In this chapter, the study mainly focused on introducing the study by outlining how cultural dimensions of power distance and individualism influence sustainable supply chain performance (SSCP) among manufacturing SMEs in Nairobi. It highlighted the gap in existing research, particularly in SMEs, and framed green supply chain practices (GSCPs) as a potential moderator. The chapter established the study's relevance, defined the research problem and objectives. This chapter defined the study scope, significance, and key variables, setting a clear direction for the research.

CHAPTER TWO

LITERATURE REVIEW

2.1: Introduction

This chapter reviews pertinent literature, laying the basis for understanding the study's theoretical and empirical context, whose purpose is to investigate the relationships between Power Distance (PD) and individualism as cultural dimensions and how they influence Sustainable Supply Chain Performance (SSCP) in Nairobi's manufacturing SMEs, moderated by green supply chain practices (GSCPS). The chapter systematically explores the theories guiding this study, the empirical review presents previous findings, focusing on PD, individualism, and SSCP, in addition to the moderating role of GSCPS. The chapter concludes by outlining the identified research gaps and providing a conceptual framework.

2.2: Theoretical Framework

A theory is a structured explanation of phenomena based on evidence that can be tested through observation and experimentation. It serves as a basis for understanding complex issues, guiding researchers in formulating questions and interpreting results (Lederman & Lederman, 2015). Additionally according to Varpio et al. (2020) a theoretical framework is vital for reviewing existing literature, identifying knowledge gaps, and framing how a new study contributes to or builds upon prior work.

This research is informed by stakeholder theory and resource dependence theory (RDT). In the realm of sustainable supply chain performance (SSCP), stakeholder theory has been employed to elucidate how organizations manage relationships with various internal and external parties whose interests are affected by business operations. Hörisch et al. (2014) examined how integrating stakeholder interests into business decision-making can enhance SSCP, highlighting the need to balance environmental, social, and economic objectives.

RDT focuses on how organizations rely on external resources for survival and success. The theory posits that organizations are not self-sufficient and must strategically manage relationships with external entities, such as suppliers and customers, to secure the resources necessary for sustainable practices (Pfeffer & Salancik, 1978). RDT is particularly useful for examining how external dependencies influence decision-making in SCs, especially in contexts

like SSCP (Carter & Rogers, 2008). Carter and Rogers (2008) applied RDT to investigate how organizations collaborate with external partners to implement SSC practices, such as reducing environmental impact and enhancing social responsibility. They found that an organization's ability to adopt sustainability initiatives often depends on its relationships with external suppliers and partners, who provide essential resources like raw materials and technology.

2.2.1: Stakeholder Theory

Stakeholder theory, developed by Edward Freeman in the 1980s, redefined the purpose of organizations by advocating for the inclusion of all parties affected by their operations, rather than focusing solely on shareholders. This theory posits that businesses exist to create value for diverse stakeholders, including employees, customers, suppliers, communities, and the environment (Freeman et al. 2018). By emphasizing ethical and inclusive practices, stakeholder theory challenges the traditional profit-maximization model. It argues that integrating stakeholder interests leads to enhanced legitimacy, trust, and long-term organizational sustainability. This approach is particularly important in the current business environment, where stakeholders demand accountability and ethical considerations in decision-making processes (Hörisch et al. 2020).

The relevance of stakeholder theory to this study lies in its ability to explain how cultural dimensions, specifically PD and individualism, influence stakeholder engagement and SSCP. In organizations with high PD, hierarchical structures often centralize authority, which can restrict participation from lower-ranking stakeholders in decision-making (Osobajo et al. 2023). In contrast, individualistic tendencies may encourage greater autonomy and creativity among stakeholders, fostering innovation in sustainability practices. This interplay between cultural dimensions and stakeholder engagement provides a critical lens for understanding how manufacturing SMEs in Nairobi can achieve sustainable supply chain outcomes while balancing diverse stakeholder interests (Vitolla et al. 2019).

Stakeholder theory emphasizes the need for transparent and open communication to build trust and acceptance among stakeholders. In SMEs, where resources are often limited, this transparency is vital for ensuring that sustainability goals align with stakeholder expectations. Furthermore, the theory suggests that organizations can enhance their legitimacy and operational effectiveness by involving stakeholders in decisions related to environmental and social performance (Hörisch et al. 2014). This is particularly significant in Kenya’s

manufacturing sector, where balancing economic growth with environmental and social sustainability remains a critical challenge. By adopting stakeholder theory, this study highlights the importance of participatory decision-making in overcoming these challenges.

Despite its contributions, stakeholder theory has faced criticism for its broad scope and difficulty in practical application. Critics argue that defining who qualifies as a stakeholder and determining how to balance conflicting interests can be complex (Freeman et al. 2018). Additionally, the theory has been criticized for its potential to create trade-offs between environmental, social, and economic objectives, which can undermine its practical implementation (Hörisch et al. 2020). However, these limitations do not diminish its relevance but rather highlight the need for nuanced applications in specific contexts, such as SMEs operating in developing economies. By addressing these criticisms, this study leverages stakeholder theory to explore the dynamics of PD and individualism in shaping sustainable supply chain performance.

2.2.2 Resource Dependence Theory

Resource Dependence Theory (RDT), introduced by Pfeffer and Salancik in 1978, provides a framework for understanding how organizations manage external dependencies to secure critical resources. The theory posits that organizations are not self-sufficient but are embedded within a network of resource exchanges, where power dynamics and interdependencies shape strategic decisions (Pfeffer & Salancik, 1978). To mitigate uncertainties, organizations establish relationships and negotiate power with external entities, such as suppliers, customers, and regulators. By managing these dependencies, organizations can ensure their survival and competitiveness. RDT's focus on external relationships and resource control makes it a valuable tool for analyzing how SMEs enhance SSCP within supply chains (Hörisch et al. 2014).

In the context of this study, RDT supports the moderating role of GSCP in enhancing SSCP. The theory explains how SMEs can leverage external collaborations to adopt environmentally friendly practices, such as eco-design, reverse logistics, and green procurement. For instance, in high power distance settings, hierarchical decision-making may limit flexibility, making it essential for SMEs to form strategic partnerships that enable resource sharing and innovation (Osobajo et al. 2023). Conversely, individualistic tendencies in SMEs may foster

entrepreneurial approaches to resource management, encouraging innovative solutions to sustainability challenges.

RDT is particularly relevant for SMEs in Nairobi , where access to resources such as capital, technology, and skilled labour can be limited. By forming partnerships and engaging in collaborative practices, these SMEs can mitigate resource constraints and enhance their SSCP (Vitolla et al. 2019). Moreover, RDT emphasizes the role of power dynamics in resource exchanges, which aligns with this study's focus on power distance as a cultural dimension. By managing these dynamics effectively, SMEs can balance internal and external pressures, ensuring that sustainability goals are met without compromising operational efficiency (Hörisch et al. 2020).

However, RDT has been criticized for its emphasis on external resource control, which may overlook the internal organizational dynamics that influence decision-making. Critics also argue that its traditional focus on economic objectives can limit its applicability to broader sustainability goals, such as social and environmental considerations (Pfeffer & Salancik, 1978). Despite these limitations, RDT remains a robust framework for understanding how SMEs navigate resource dependencies in dynamic environments. By integrating RDT with stakeholder theory, this study provides a comprehensive perspective on how cultural dimensions and green practices shape sustainable supply chain performance in manufacturing SMEs.

2.3:Empirical Review

This section analyses relevant studies concerning PD, individualism, and SSCP, focusing on social, environmental, and economic dimensions and analysing the moderating role of green supply chain practices.

2.3.1: Power distance and sustainable supply chain performance

The growing significance of SSCM in contemporary business is widely recognized. Sedita et al. (2022) argue that high PD often results in diminished SSCP due to inflexible hierarchical structures and resistance to changes in power dynamics. Their findings indicate that organizations with lower PD typically possess enhanced social and institutional capabilities for sustainability, fostering innovation and inclusivity. This suggests that PD can profoundly influence an organization's SSCP, thereby affecting social and environmental outcomes.

For SMEs seeking to enhance their SSCP, it is essential to address the dynamics of PD by promoting open communication, inclusive decision-making, employee empowerment, and collaboration with suppliers and customers. Such strategies can help bridge the divide between PD and sustainable performance, cultivating a culture that values diverse perspectives and participation at all levels. This, in turn, can lead to improved SSCP across economic, social, and environmental performance metrics (Osei et al., 2023).

A hierarchical structure is an organizational system where individuals or groups are ranked according to their status or authority. This structure establishes a clear chain of command, with each level assigned specific roles and responsibilities. In the context of SMEs, a hierarchical structure can offer several advantages. Firstly, it clarifies communication and decision-making processes, which are vital for the success of small businesses. With a defined chain of command, employees understand whom to report to and who is responsible for key decisions, reducing confusion and aligning efforts toward common goals. Secondly, a hierarchical structure fosters accountability and responsibility. By assigning specific roles and responsibilities at each level, it becomes easier to hold individuals accountable for their actions, thereby promoting a culture of responsibility and ensuring alignment with organizational objectives. Lastly, a hierarchical structure can enhance efficiency and productivity. With a clear chain of command and defined roles, employees can concentrate on their tasks without concern for others' activities, minimizing duplication of effort and ensuring that everyone is working toward shared goals (Salthe, 2012).

Hierarchical structures can be both beneficial and detrimental. While they provide order and accountability, they can also hinder flexibility and innovation, which are crucial for adopting sustainable practices. Schneeweirj (1995) recommends dismantling rigid systems into interdependent subsystems to simplify complexity, enabling more responsive approaches to sustainability challenges. Viardot (2017) supports the notion that SMEs should implement functional structures that encourage specialization, but he cautions that this may lead to coordination difficulties.

Borna & Wennberg (2023) suggest that in smaller SMEs, hierarchical structures tend to be less formal and more adaptable, which can enhance communication and collaboration across various organizational segments. This flexibility is particularly vital for sustainable SSCP, as it often necessitates close cooperation among diverse stakeholders, including suppliers, customers, and local communities. Conversely, in larger SMEs, hierarchical structures may become more formal and rigid, complicating the implementation of sustainable practices

throughout the organization. This rigidity is especially prevalent in industries that have historically prioritized other concerns over sustainability, where employees and management may resist change.

Osei et al. (2023) found that while strictly controlled hierarchical structures can positively influence SSCP, they may also dampen employee motivation and hinder their progress and satisfaction, ultimately weakening social performance. To address this, they recommend that managers enforce clear sustainability guidelines in the workplace to align employee efforts with sustainability goals. This approach aims to strike a balance between the need for control and structure and the necessity for flexibility and employee motivation to achieve robust social performance.

The decision-making processes within SMEs play a crucial role in their capacity to achieve SSCP. Dey et al. (2021) emphasize that a well-integrated decision-making framework is vital for maintaining a competitive advantage and ensuring long-term sustainability. Effective decision-making enhances social and environmental outcomes and boosts economic performance by optimizing resource allocation and ensuring operational efficiency. Ueda et al. (2009) suggest that decision-making processes can be refined to prioritize sustainability by establishing a system where both overarching goals and individual demands are met through dynamic interactions among decision-makers with diverse objectives and values.

Borna and Wennberg (2023) and Viardot (2017) note that smaller SMEs often exhibit more decentralized decision-making, which can facilitate the implementation of innovative and sustainable practices at the local level. In contrast, larger SMEs may have more centralized decision-making structures, which can complicate the adoption of sustainable practices locally. Zábojnik (2002) defines centralized decision-making as a structure where decision-making authority is concentrated in a single individual or group at the top of the organizational hierarchy. While centralization can streamline decision-making by reducing the need for communication and coordination across different organizational levels, it may also stifle flexibility and creativity, as lower-level employees may lack opportunities to share their insights, potentially hindering SSCP. Inversely, decentralized decision-making distributes authority throughout the organization, fostering creativity and innovation by allowing employees at all levels to contribute their ideas and perspectives. However, this approach can also slow down decision-making due to the increased need for communication and coordination, which may impede economic performance by delaying the implementation of cost-saving initiatives.

Wu & Pagell's (2011) examine how organizations navigate the balance between business and environmental needs amid uncertainty and imperfect information, focusing on four key decision areas: purchasing and supply management, product and process design, internal operations management, and logistics. They conclude that organizations must reconcile the pursuit of short-term profitability with long-term environmental sustainability in their SC decisions. SMEs face similar challenges in aligning short-term financial gains with long-term sustainability goals. For instance, investments in green technologies or eco-friendly processes may incur initial costs but can lead to cost savings, enhanced competitiveness, and improved economic performance over time. Ultimately, effective decision-making, whether centralized or decentralized, is essential for shaping the SSCP of SMEs' supply chains. By aligning their decision-making processes with sustainability objectives, SMEs can enhance their resilience, operational efficiency, and ability to meet environmental, social, and economic performance targets.

PD examines the dynamics between authority figures and their subordinates, with high PD organizations characterized by a centralized power structure. In cultures with high PD, hierarchy is a fundamental aspect of authority, leading to a rigid top-down decision-making process that often stifles employee input, particularly from lower-level staff (Bochner & Hesketh, 1994). Erez (2010) points out that high PD limits open communication and can diminish an organization's ability to respond effectively, which is vital for SSCP. Such inflexible structures can impede innovation, as employees may feel discouraged from proposing sustainable initiatives that challenge established norms or threaten hierarchical authority (Vachon, 2010).

In contrast, low PD organizations tend to be more egalitarian, granting employees greater opportunities for participation and fostering an environment that encourages the free exchange of ideas and collaborative decision-making (Matusitz & Musambira, 2013). This adaptability enhances SSCP, as employees, particularly those in operational roles, can respond more swiftly to sustainability challenges. Low PD also facilitates direct feedback, ensuring a continuous flow of information across different organizational levels, which increases the chances of successful sustainability initiatives. Uzun (2020) found that organizations with lower PD scores tend to have higher employee engagement and proactive problem-solving approaches, especially in manufacturing sectors where environmental impacts are significant.

In the context of Nairobi’s SMEs, which operate within a culturally diverse landscape, understanding the role of PD in SSCP can shed light on how power dynamics affect green

supply chain practices, from decision-making autonomy to inclusivity in sustainability efforts. Bochner & Hesketh (1994) also suggest that low PD organizations achieve better SSCP, as employees at various levels can contribute innovative solutions that align with the organization's sustainability objectives, underscoring the importance of PD as a factor in achieving SSCP (Uzun, 2020; Matusitz & Musambira, 2013).

2.3.2: Individualism and Sustainable supply chain performance

Cultures that prioritize individualism place a strong emphasis on independence, personal achievement, and self-expression, along with a focus on personal responsibility over group cohesion (Goncalo & Staw, 2006). According to Sedita et al. (2022), individualism as a cultural trait is significantly linked to superior SSCP. Societies that embrace individualism generally exhibit a more favourable attitude toward environmental sustainability and a greater inclination toward innovation compared to collectivist cultures. Furthermore, Sedita et al. (2022) assert that individualism is closely associated with enhanced SSCP, especially in the realms of environmental sustainability and innovation. This highlights the importance of understanding individualism as a driving force behind SSCP. In individualistic societies, the emphasis on personal autonomy and responsibility fosters a proactive stance toward environmental issues. Husted (2005) identified a positive correlation between an organization's level of individualism and its capacity to respond to both external and internal pressures. This suggests that individualism is vital for effective communication and the achievement of sustainability objectives, which also carries economic implications. Proactive sustainability initiatives often result in cost savings through improved efficiency, reduced waste, and innovative practices, thereby benefiting both environmental and economic outcomes.

Employee autonomy, defined as the ability to make decisions independently, is a fundamental need for individuals and is closely linked to intrinsic motivation, fostering long-term, sustainable development within organizations. It is also a key organizational factor influenced by the external environment and other external variables (Idmark et al. 2022). Idmark et al. (2022) found a positive relationship between employee autonomy and environmental performance, suggesting that autonomous employees are more likely to create and implement initiatives aimed at reducing emissions. Additionally, organizations that provide higher levels of autonomy may attract more skilled and productive workers compared to those that do not offer such benefits. These high-performing employees are often better equipped to dedicate

time and expertise to sustainability projects. Ultimately, by prioritizing corporate social responsibility and enhancing workforce autonomy, SMEs can attract top talent, which can lead to increased productivity in the workplace.

The economic advantages of granting employees autonomy are substantial. SMEs that empower their workforce with greater autonomy often experience heightened productivity, which can lead to reduced operational costs and more efficient resource utilization. By emphasizing autonomy and enabling employees to take charge of sustainability initiatives, SMEs can stimulate innovation and enhance their overall financial performance. Additionally, when employees are allowed to leverage their expertise in green supply chain practices , SMEs may lower production costs, improve operational efficiency, and boost economic performance through minimized waste and better resource management Zhou et al. (2019)

In highly autonomous roles, employees have the freedom to determine what tasks to perform, how to execute them, and when to do so. This autonomy allows them to manage their time and energy independently, select their working methods, and decide how often to interact with colleagues (Zhou et al. 2019). Moreover, autonomy fosters sustainability by encouraging employee self-development, which is essential for organizations aiming for sustainable growth. When employees feel they have significant autonomy and independence in their work, they are likely to experience a greater sense of self-determination and view their roles as akin to running their own business. This sense of ownership and control can lead to increased motivation, positive job attitudes, and enhanced efficiency.

High levels of SSCP among manufacturing SMEs in Nairobi can yield considerable benefits. SMEs can create and sustain more SSC by enhancing employee engagement, flexibility, continuous improvement, innovation, and risk management. As sustainability becomes increasingly vital for business success, achieving long-term sustainability goals can also contribute to economic and social development. However, SMEs must carefully balance autonomy with central oversight, establish clear sustainability guidelines and objectives, and invest in ongoing training and education to ensure employees are well-informed and aligned with sustainability goals.

Communication styles, as described by Gudykunst et al. (1996), refer to the ways individuals interact to convey how literal meanings should be interpreted. These styles can vary across and within organizations. Effective communication is crucial for any sustainability plan, as it

enables individuals to express themselves both internally and externally using appropriate communication methods. Poor communication can hinder internal collaboration, making it challenging to implement changes that enhance sustainability. Additionally, external communication with customers, partners, and the community is vital for sustainability strategies, as a lack of communication can lead to lost sales opportunities. Given the complexity and uncertainty surrounding sustainability issues, effective communication is necessary to share information among stakeholders and foster a shared understanding of societal values and goals. To achieve effective communication, managers should convey their messages clearly and concisely, whether orally or in writing, while also considering cultural differences in communication styles (Genç, 2017).

Emerson (2022), in an article for Harvard Professional Development, presents a framework that categorizes communication styles into four elements: direct (also known as analytical or dominant), functional, collaborative, and influencer. This framework is useful for categorizing individuals within an organization, particularly SME leaders or managers, based on their communication approaches. Gudykunst et al. (1996) suggest that one way to explain variations in communication styles is through Hall's (1976) distinction between low-context and high-context communication. High-context communication relies on implicit and indirect messages, where meanings are embedded in the individual or the socio-cultural context, such as nonverbal cues and indirect verbal hints. In contrast, low-context communication uses explicit and direct messages where meanings are clearly stated, such as in written communications like emails and memos or verbal communications like lectures and speeches. This research will investigate the impact of low-context communication styles on SSCP among manufacturing SMEs in Nairobi .

Duan et al. (2022) explored the external communication of SSCM practices, specifically analyzing how different framing strategies affect stakeholders' attitudes toward sustainability. Their findings indicate that clear communication can positively influence stakeholders' commitment to sustainable products. While this study focused on external communication, the same principles apply internally. SME managers must ensure that sustainability practices are effectively communicated to employees to foster alignment with organizational goals. Efficient communication can also enhance economic performance by streamlining decision-making, reducing misunderstandings, and improving coordination, ultimately lowering operational costs and boosting productivity.

Galli et al. (2023) highlight that effective communication of sustainability practices can lead to improved environmental and economic outcomes for SMEs. They emphasize that communication should enhance market performance and strengthen relationships with supply chain partners. By promoting transparency and openness, SMEs can cultivate stronger, trust-based relationships that facilitate greater collaboration on sustainability initiatives. Such partnerships can enhance economic performance through cost savings, better resource management, and increased market competitiveness.

Individualism influences workplace dynamics by fostering a culture of independence and self-driven initiative. Sedita et al. (2022) note that in individualistic environments, employees are often encouraged to exercise autonomy, which can positively impact SSCP by promoting innovative and independent sustainability actions. This sense of ownership can significantly affect SSCP, as employees may personally invest in green practices such as energy-efficient processes or waste reduction initiatives. The autonomy associated with individualism also facilitates more adaptable decision-making, especially when sustainability is prioritized in organizational objectives.

2.3.3: Green Supply Chain Practices on the Relationship between Power Distance and Individualism and Sustainable Supply Chain Performance

Researchers like Zhu and Sarkis (2004) have highlighted the importance of GSCPs in influencing SSCP. They point out that while the direct effects of these practices have received considerable attention, their moderating role is also crucial. GSCPs assist in navigating the complexities of cultural dimensions by ensuring that sustainability objectives are systematically woven into organizational processes. Specifically, Mensah et al. (2020) examined how GSCPs, such as green procurement and eco-design, function as moderating factors that align cultural values with Sustainable Supply Chain Practices (SSCP). Their research indicates that GSCPs are particularly effective in environments with high PD, where centralized decision-making can hinder innovation. By providing structured sustainability frameworks, GSCPs help align top-down directives with environmental goals, ensuring that hierarchical structures do not obstruct the adoption of green practices.

Green et al. (2012) found that companies with strong GSCPs achieve greater SSCP by successfully integrating sustainability into their SC, even in the face of cultural challenges like power asymmetry or decentralized decision-making. They argue that GSCPs facilitate the

synchronization of sustainability efforts across diverse cultural contexts, enhancing organizational alignment with environmental objectives. In individualistic cultures, Fan and Zhang (2016) noted that GSCPs act as structured frameworks that channel individual autonomy toward collective sustainability goals. In these cultures, where innovation and personal responsibility are prioritized, GSCPs ensure that independent efforts contribute to broader environmental aims, promoting a cohesive approach to sustainability.

In high PD contexts, where organizational hierarchies are pronounced and decision-making is typically centralized, GSCPs help moderate the rigid power structures that inhibit innovation and sustainable practices. Zhu et al. (2008) and Sarkis et al. (2010) have shown that employees in high PD environments often defer to authority and are less likely to propose sustainability initiatives independently. When GSCPs are implemented as formalized sustainability processes, they ensure that top management incorporates sustainability into their decision-making frameworks, thereby overcoming barriers to participation and innovation. These practices provide clear guidance for employees, mitigating the adverse effects of power asymmetry by embedding sustainability goals within the organizational hierarchy. In such scenarios, GSCPs help centralize sustainability initiatives, facilitating high PD organizations in achieving SSCP by reinforcing sustainable practices through their hierarchical structures.

In environments characterized by low PD, where decision-making is decentralized and employees are encouraged to engage in innovation, GSCPs play a crucial role in coordinating various sustainability initiatives, thereby ensuring organizational coherence.

Testa and Iraldo (2010) noted that in low PD organizations, employees often operate with increased autonomy, which can lead to fragmented sustainability efforts if not properly aligned with the organization's objectives. In this scenario, GSCPs, such as eco-design and green manufacturing, provide cohesive frameworks that ensure decentralized initiatives align with the company's sustainability goals. By acting as facilitators, GSCPs ensure that individual and departmental sustainability efforts are interconnected and contribute to the broader strategic vision of Sustainable Supply Chain Performance (SSCP).

When examining individualistic cultures, where personal autonomy and innovation are highly prized, GSCPs similarly serve a moderating function by aligning individual contributions with collective sustainability objectives. Fan and Zhang (2016) investigated the moderating influence of GSCPs in individualistic contexts and found that these practices offer a structured

approach for employees to innovate while ensuring their efforts support the organization's sustainability aims. In highly individualistic cultures, employees may prioritize personal initiatives, which can lead to misalignment with collective environmental goals. GSCPs formalize green processes, such as sustainable procurement and eco-friendly product design, ensuring that personal autonomy is directed toward aligned sustainability efforts, thereby enhancing overall SSCP. However, in low individualism cultures that emphasize collective action and group cohesion, GSCPs help standardize sustainability efforts and ensure strategic alignment. Yildiz Çankaya and Sezen (2019) argue that in collectivist cultures, decision-making often prioritizes group consensus, which can slow the adoption of sustainability practices. However, by implementing GSCPs, organizations can create clear sustainability frameworks that guide collective efforts toward achieving environmental objectives. This moderation helps balance the slower decision-making processes typical of collectivist cultures by providing a structured, uniform approach to sustainability that all members of the organization can follow.

Empirical research further highlights the moderating impact of GSCPs. Green et al. (2012) demonstrated that GSCPs significantly influenced the relationship between organizational culture and SSCP in their study of manufacturing firms. Their findings revealed that companies with strong GSCPs, including green procurement and logistics, were better able to integrate sustainability into their supply chains, regardless of the cultural dynamics at play. Similarly, Prabowo et al. (2022) confirmed that GSCPs, by establishing clear guidelines for environmental practices, assisted both hierarchical and individualistic organizations in navigating the complexities of incorporating sustainability into their operations, thereby enhancing their overall SSCP.

2.4: Summary of Research Gaps

Table 2.1 shows research gaps identified in this study**.**

Table 2.1: Research Gaps

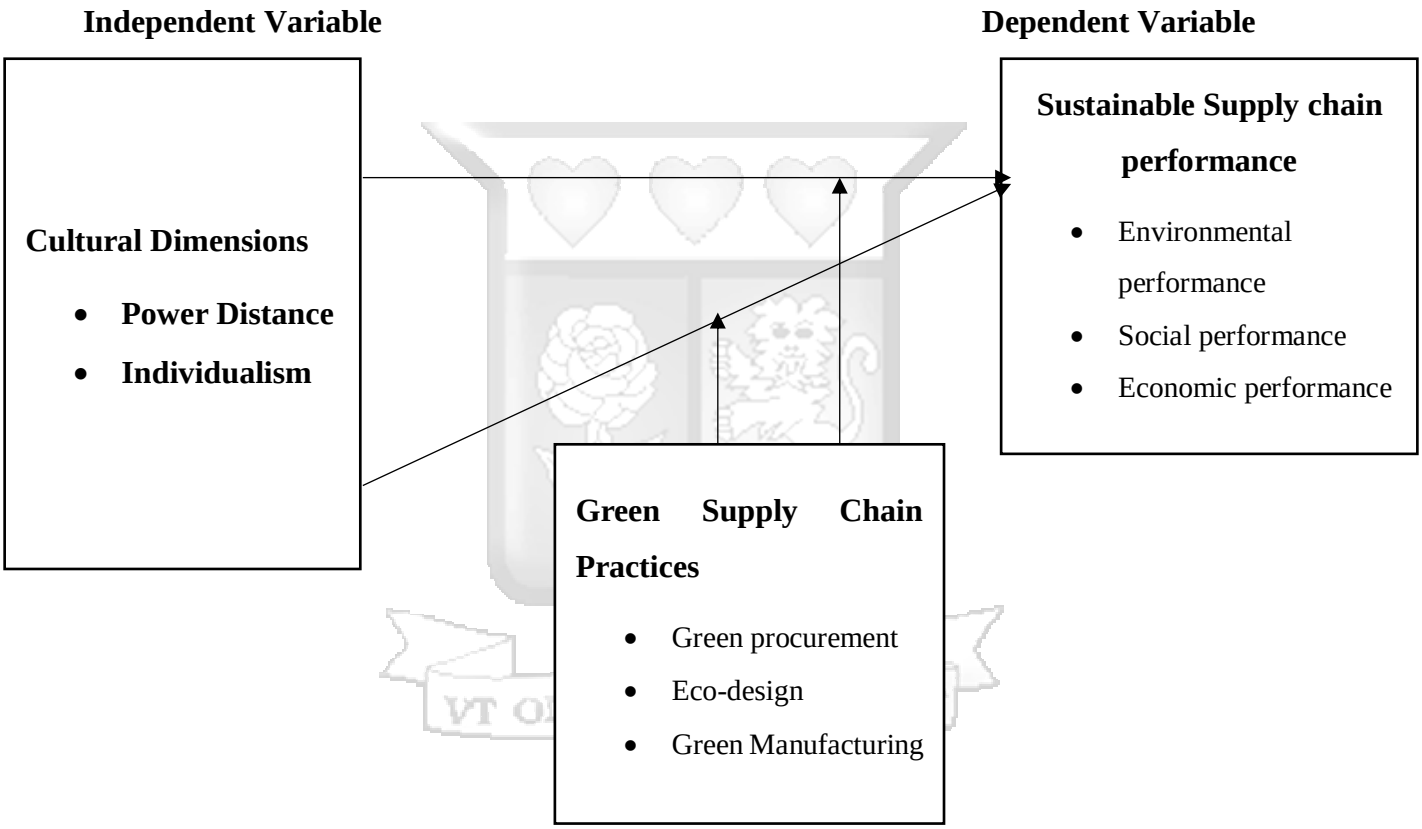
No	Author (s) and Year of Publication	Article Title	Findings	Gaps
1	Martin B. Osei, Thanos Papadopoulos, Adolf Acquaye, Teta Stamati (2023)	Improving SSCP through organizational Culture: A competing values framework approach	Developmental, hierarchical, and group cultures enhance SSCP. Collaboration mediates the Organizational culture and SSCP relationship.	The study has Limited empirical studies using CVF to link organizational culture to SSCP, particularly in SMEs in emerging markets. This study, therefore, applied Hofstede's cultural dimensions (PD and Individualism) instead of CVF, using SMEs in Nairobi as the context. It explores how these dimensions affect SSCP.
2	Adelaide Martins, Manuel Castelo Branco, Pedro Novo Melo, and Carolina Machado (2022)	Sustainability in SMEs: A Systematic Literature Review and Future Research Agenda	SMEs face challenges such as resource constraints and lack of frameworks; research is skewed toward Europe.	In the study, there's a lack of SME specific sustainability reporting research in developing countries, therefore, this research focused on Kenyan SMEs and investigates cultural and operational drivers of SSCP, contributing empirical data from a developing country context.

3	Cheronoh Mercy, (2023)	Determinants of Sustainability of SMEs Projects: A Case of Litein Town, Bureti Sub , Kericho , Kenya.	Access to finance, business competition, marketing, and skills affect sustainability.	There's a narrow geographic scope limits generalizability; no comparative insights across regions, this study focused on Nairobi SMEs and considers cultural dimensions and green practices, offering more generalizable findings.
4	Silvia Rita Sedita, Silvia Blasi and Jiawen Yang, (2022)	The Cultural Dimensions of Sustainable Development: A Cross-Country Configurational Analysis	In the study, cultural combinations of low PD and high Individualism contribute to high sustainability.	The focus of the study was on the Sustainable Development Goals, this study focus was on examining how cultural dimensions of PD and Individualism contribute to high sustainability in Nairobi, Kenya.
5	Didik Wahjudi, Moses L. Singgih, Patdono Suwignjo, Imam Baihaqi (2014)	The Impact of PD and Individualism on Total Quality Management (TQM): An Empirical Research on Indonesian Manufacturing Firms	Individualism supports TQM; PD has no significant effect.	The study focused on a critical element of organizations which is Total Quality Management, this study built on the findings by linking PD and Individualism directly to SSCP

Source: Researcher (2025)

2.5: Conceptual Framework

A conceptual framework is a diagrammatic depiction of the interaction between the study variables. Kana (2017) defined a conceptual framework as a connected set of ideas regarding how a given phenomenon functions or relates to its parts. The conceptual framework below identifies the relationship between PD, individualism, and SSCP.



Source: Researcher (2025)

Figure 2.1: Conceptual Framework

2.6: Operationalization of Variables

Table 2.2: Operationalization of Variables

Variable	Construct	Indicators	Data Collection tool	Supporting literature
Power Distance	Hierarchical structure	Management adoption of flexible/rigid structures	Structured questionnaire: 5-point Likert scale	Borna & Wennberg (2023), Osei et al. (2023)
	Decision mechanisms	Centralized or decentralized decision-making processes	Structured questionnaire: 5-point Likert scale	Vachon (2010); Matusitz & Musambira (2013)
	Employee Voice	Openness to employee feedback and input in sustainability initiatives	Structured questionnaire: 5-point Likert scale)	Uzun (2020); Bochner & Hesketh (1994)
Individualism	Autonomy	Management levels of supervision, time division, working models	Structured questionnaire: 5-point Likert scale	Zhou et al. (2019)
	Personal Responsibility	Degree of alignment between personal and organizational sustainability goals	Structured questionnaire: 5-point Likert scale)	Husted (2005); Sedita et al. (2022)
	Communication styles	Preferred communication	Structured questionnaire:	(Galli et al. 2023)

		channels and transparency	5-point Likert scale	
Green Supply Chain Practices (GSCP)	Green procurement	Percentage of eco-friendly suppliers, green certification, sustainable materials	Structured questionnaire: 5-point Likert scale	(Romli et al. 2015)
	Eco-design	Energy efficiency, recyclability, lifecycle assessment	Structured questionnaire: 5-point Likert scale	
	Green Manufacturing	Use of clean energy, waste reduction measures, lean production	Structured questionnaire: 5-point Likert scale	(Romli et al. 2015)
Sustainable supply chain performance	Environmental performance	supply chain's implementation of environmentally friendly projects, sustainable extraction of raw materials, water consumption, energy consumption, frequency of waste recycling, and compliance with	Structured questionnaire: 5-point Likert scale	Fan & Zhang (2016), Varsei et al. (2014), and Kumar et al. (2023)

		environmental standards		
	Economic Performance	Profitability, cost efficiency, revenue growth, operational cost reductions, SC cost savings	Structured questionnaire: 5-point Likert scale	Fan & Zhang (2016), Varsei et al. (2014), and Kumar et al. (2023)
	Social performance	Employee training and development, employee health and safety, community development, philanthropy, and social responsibility	Structured questionnaire: 5-point Likert scale	Fan & Zhang (2016), Varsei et al. (2014), and Kumar et al. (2023)

Source: Researcher (2025)

2.7: Chapter Summary

This chapter examined the current literature regarding the relationships among the variables. It provided a theoretical overview of stakeholder theory and rRDT, an empirical analysis of the research variables, a conceptual framework, and a discussion of identified research gaps. The chapter concluded with the operationalization of the research variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1: Introduction

This chapter outlines the methodology employed to investigate the influence of cultural dimensions on sustainable supply chain performance within manufacturing SMEs in Nairobi , focusing on the moderating role of green supply chain practices. This chapter outlines the methodology, beginning with the research philosophy and progressing to the research design, including population and sampling techniques to ensure representativeness. It details data collection and analysis methods aligned with the study's objectives, employing both descriptive and inferential statistics. Measures to ensure reliability, validity, and ethical compliance were also incorporated to uphold the study's integrity and credibility.

3.2: Research Philosophy

According to (Creswell, 2013), a paradigm consists of a collection of beliefs or philosophical assumptions that guide researchers in their studies, often called worldview assumptions. These paradigms arise from differing perspectives on the nature of knowledge (epistemology), the significance of values (axiology), and the essence of reality (ontology). They are categorized based on their philosophical frameworks, which are shaped by their assumptions regarding knowledge, reality, and the roles of values. There are five primary research philosophies: positivism, critical realism, interpretivism, postmodernism, and pragmatism. Positivism aligns with the philosophical approach of natural scientists, focusing on observable social realities to generate law-like generalizations.

Critical realism seeks to explain our observations and experiences by examining the underlying structures of reality that influence observable events. Interpretivism emerged as a critique of positivism, adopting a subjectivist viewpoint that highlights the uniqueness of humans in creating meaning, as opposed to physical phenomena. Postmodernism emphasizes the importance of language and power dynamics, challenging established ways of thinking and amplifying marginalized perspectives. Pragmatism posits that concepts are meaningful only in their capacity to facilitate action (Saunders et al. 2019). This research adopted a positivist approach, which was essential for establishing relationships between variables and

generalizing findings to a broader population. The focus was on examining the impact of PD and individualism on SSCP among SMEs in the manufacturing sector of Nairobi .

3.3: The Research Design

The research design served as a comprehensive framework for addressing research questions, highlighting the necessity of clearly articulating those questions. It outlined specific objectives derived from the research, identified the sources of data collection, detailed the methods for processing and analyzing the data, and addressed any ethical considerations that arose (Saunders Mark et al., 2019). Blumberg et al. (2014) suggested that the main focus of descriptive research was to determine the who, what, where, when, and how much or how often regarding a particular issue. This study adopted a descriptive cross-sectional research design, as it effectively captured the characteristics and conditions of a situation at a specific point in time. This design facilitated the use of quantitative methods to investigate the phenomena under study within a defined timeframe while minimizing the researcher's influence during the survey.

3.4: Population of the study

A population refers to a group of cases, such as individuals, locations, objects, or any observable collection that are of interest in a research study, and it is determined by the inferences drawn from the data (Cooper & Schindler, 2014). In this research, the population comprised all the 538 Nairobi manufacturing SMEs registered as members of the Kenya Association of Manufacturers (KAM, 2023). These SMEs fall under different categories: Building, Mining and Construction, Electrical and Electronic, Chemical works, Energy, Leather and Footwear, Agriculture and Fresh Produce, Food and Beverages, Metalworks, Automotive, Paper and Board, Pharmaceuticals and Medical Equipment, Plastics and Rubber, Textiles and Apparel, and, Timer, Wood and Furniture. The unit of analysis was one SME owner or supply chain manager or supply chain officer within the SME. The respondent was selected for the research since the study assumed that they were aware of power distance, individualism, SSCPs and GSCPs.

3.5: Sampling Technique

Sampling involves selecting a group of individuals for a study in a manner that ensures they accurately represent the larger population from which they are drawn. A sample is a carefully selected subset that reflects the characteristics of the entire population (Gall & Borg, 2012).

According to Blumberg et al. (2014), sampling techniques refer to the methods used to choose this sample. There are various sampling techniques, which can be categorized into probability and non-probability methods. Zikmund et al. (2010) differentiate between the two by noting that probability sampling techniques give each element in the sampling frame an equal opportunity to be included in the sample, while non-probability sampling techniques are often subjective and influenced by the researcher's preferences rather than providing equal selection chances. Slovin's formula (1960) was applied and illustrated to identify the sample size for this study as:

$n = N / (1 + Ne^2)$

Where: n = sample size N = Total Population e = Error of Tolerance with a confidence level of 95% (giving a margin error of 0.05)

$n = 538 / (1 + 538(0.05)^2)$ n = 229 Nairobi's Manufacturing SMEs

To account for potential non-response, the adjusted sample size is calculated as:

n' = n / (1 - non-response rate)

Assuming a 20% non-response rate: n' = 229 / (1 - 0.20) n' = 286

Thus, to ensure that at least 229 valid responses were obtained, the target sample size was 286 SMEs in Nairobi's manufacturing sector. Although purposive sampling is a non-probability technique, it was employed in this study following the application of Slovin's formula to ensure the sample size was statistically appropriate for analysis. This approach was justified by the need to target respondents with specific technical expertise in supply chain and sustainability practices—knowledge not uniformly distributed across all staff in manufacturing SMEs. As such, purposive sampling ensured that data were collected from individuals best positioned to provide informed responses, thereby enhancing the study's construct validity (Etikan, Musa, & Alkassim, 2016). While this limits generalizability, the approach was appropriate given the study's focus on specialized roles requiring contextual and technical understanding.

3.6: Data Collection Methodology

This study utilized primary data. According to Creswell (2013), the data collection process encompasses not only the selection or design of the instrument but also the procedures and conditions under which the instruments are administered. Saunders et al. (2019) describe

primary data as information gathered directly by the researcher. The primary data source was a structured, closed-ended questionnaire employing a five-point Likert scale (1 - strongly disagree, 2 - disagree, 3 - neutral, 4 - agree, 5 - strongly agree). A 5-point Likert scale was employed in this study due to its efficiency in capturing perceptions and attitudes while minimizing respondent burden. It provides sufficient discriminatory power for constructs such as Power Distance, Individualism, GSCP, and SSCP, and supports reliable, consistent measurement (Revilla et al., 2021). The neutral midpoint also allows for balanced responses, particularly in culturally sensitive contexts (Krosnick & Presser, 2020).

This questionnaire was distributed to owners of SMEs, supply chain personnel, or operations managers. The questionnaires were self-administered using a Google link and delivered in person to the premises of the manufacturing SMEs within Nairobi . The respondents comprised supply chain managers across the different facets of the SME supply chain network, including procurement managers, logistics managers, supply chain managers, production supervisors, operations managers, warehousing managers, and, depending on the structure of the companies, sustainability managers. One respondent per company was required to respond to the survey. Respondents had two to three weeks to complete the questionnaire. Any necessary follow-ups or clarifications were conducted via mobile phone calls and email, and under extreme circumstances, via physical meetings. The questionnaires were distributed with a self-introduction and an official letter from Strathmore University, the institutional review ethics permit, and the national-level research permit from the National Commission for Science and Technology authorizing the data collection.

3.7: Reliability and Validity

Reliability and viability of research are key indicators of its quality. In addition, they ensure the achievement of the intended objectives.

Research is deemed reliable when it can be replicated by another researcher undertaking similar investigations. According to Kumar (2018), the results of the research should demonstrate consistency. Consequently, the consistency and stability of an instrument are referred to as its reliability. This study incorporated a pilot study. Babbie (2010) explains that a pilot study involves administering a questionnaire to a small group of individuals to pre-test the questions, allowing the researcher to identify any flaws, limitations, or weaknesses in the design.

The questionnaire's reliability was evaluated through Cronbach's Alpha, which measures internal consistency. Cronbach's alpha was calculated by applying SPSS version 27 for reliability analysis. The alpha coefficient's value ranges from 0 to 1 and may be used to describe the reliability of factors extracted at the 0.5 significance level from dichotomous and/or multi-point formatted questionnaires or scales. A higher value shows a more reliable generated scale. Cooper and Schindler (2008) have indicated that 0.7 is an acceptable reliability coefficient. Table 4.3 shows that had the highest reliability was individualism (α=0.813) followed by Sustainable Supply Chain Performance: Economic Performance (α=0.812), sustainable Supply Chain Performance: Social Performance (α=0.776), Power Distance (α=0.769), sustainable Supply Chain Performance: Environmental Performance (α=0.767), Green Supply Chain Practices: Green Procurement (α=0.751), Green Supply Chain Practices: Green Manufacturing (α=0.733) and Green Supply Chain Practices: Eco-Design (α=0.701). This illustrates that all the five scales were reliable as their reliability values exceeded the prescribed threshold of 0.7.

Table 3.3: Reliability Coefficients

Scale	**Cronbach's Alpha**	**Number of items**
Power Distance	0.769	10
Individualism	0.813	9
Green Supply Chain Practices: Green Manufacturing	0.733	5
Green Supply Chain Practices: Green Procurement	0.751	5
Green Supply Chain Practices: Eco-Design	0.701	5
Sustainable Supply Chain Performance: Environmental Performance	0.767	5
Sustainable Supply Chain Performance: Economic Performance	0.812	5

Sustainable Supply Chain Performance: Social Performance	0.776	5

Source: Researcher (2025)

Cooper and Schindler (2014) define validity as the extent to which a test's sample items accurately reflect the content it aims to assess. Furthermore, Saunders et al. (2019) describe validity as the degree to which an empirical measure effectively captures the core aspects of the issue under investigation. In this study, both content and construct validity were utilized to ensure that all questions directed at respondents effectively measured each variable in alignment with the stated objectives. Additionally, the supervisor's insights and feedback were considered to confirm the suitability of the responses to the research questions.

3.8: Data Analysis

The purpose of data analysis was to understand the data and evaluate its appropriateness for the study. The data collected was quantitative in nature. Therefore, both descriptive and inferential statistics were employed for analysis. Descriptive statistics included measures such as mean, standard deviation, frequency, and percentages. Inferential statistics on the other hand, utilized multiple regression analysis to examine the relationships among the dependent, independent, and moderating variables. The analysis was conducted using SPSS version 27.

The general model for the multiple regression analysis was:

$$SSCP=\beta_0+\beta_1PD+\beta_2IDV+\beta_3GSCP+\beta_4(PD\times GSCP)+\beta_5(IDV\times GSCP)+\epsilon$$

Where:

- **SSCP** = Sustainable Supply Chain Performance (dependent variable),
- **PD** = Power Distance (independent variable),
- **IDV** = Individualism (independent variable),
- **GSCP** = Green Supply Chain Practices (moderating variable),
- **PD × GSCP** = Interaction term between Power Distance and Green Supply Chain Practices,
- **IDV × GSCP** = Interaction term between Individualism and Green Supply Chain Practices,

- β_0 = Intercept,
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Coefficients for each predictor and interaction term,
- ε = Error term.

This study employed hierarchical multiple regression to test the moderating role of GSCP on the relationships between PD, Individualism, and Sustainable SSCP. Moderation was assessed by first entering the independent variable (PD or IDV) and the moderator (GSCP) into the regression model, followed by an interaction term (PD × GSCP or IDV × GSCP). The interaction term was computed using standardized variables to minimize multicollinearity and ensure interpretability (Onyango & Were, 2020).

A significant change in the coefficient of determination (R^2) and a statistically significant beta value for the interaction term were used as indicators of a moderating effect (Mugenda & Mugenda, 2003). Diagnostic tests such as the Variance Inflation Factor (VIF) were conducted to detect and mitigate multicollinearity, thereby improving the validity of the regression outcomes. The results of this study were presented using various visual representations such as charts, bar graphs, and tables to facilitate a clear understanding of the data patterns. Descriptive statistics, including means, percentages, and standard deviations, were summarized in tabular format. Additionally, inferential statistics, such as regression analysis outputs, were illustrated through scatter plots where necessary to highlight key relationships between variables. These visual tools will enhance the interpretation and dissemination of findings to both academic and industry stakeholders.

3.9: Ethical Considerations

This study focused on ethical considerations at the firm level. Prior to data collection, approval was obtained from Strathmore University Ethical Review Board, along with authorization from NACOSTI, the body designated by the Kenyan government to oversee such activities. Participation in this research was entirely voluntary, and only those manufacturing SMEs that consented to take part were included. The study made a concerted effort to avoid collecting sensitive or intrusive information from respondents. All responses and data collected were kept confidential and used solely for academic purposes. Additionally, proper credit was given to the authors and contributors of the literature referenced in this study.

CHAPTER FOUR

DATA ANALYSIS RESULTS AND DISCUSSIONS

4.1: Introduction

This chapter presents a detailed analysis of the research findings on the relationship between power distance, individualism, and sustainable supply chain performance, focusing on the moderating role of green supply chain practices in manufacturing SMEs in Nairobi . The discussion is structured using descriptive and inferential statistical techniques to interpret the data comprehensively. The results offer insights into the influence of cultural dimensions on SSCP within supply chains and the extent to which green supply chain practices enhance or mitigate these effects.

4.2: Response Rate

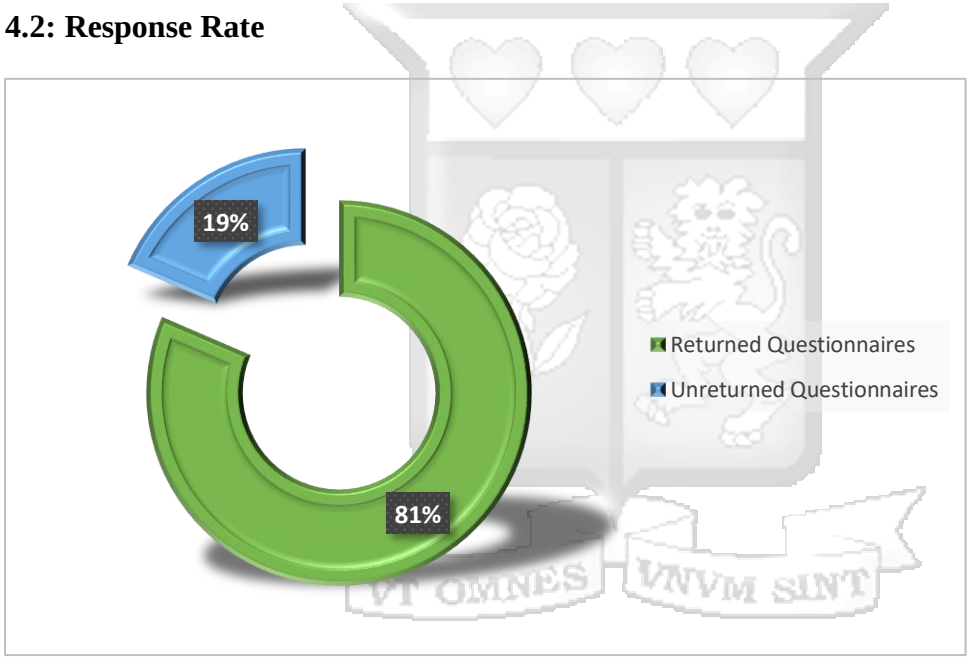


Figure 4.2: Response Rate

The study targeted 286 SMEs in Nairobi's manufacturing sector. Of the questionnaires issued, 233 filled in and returned the questionnaires making a response rate of 81.47%. This response rate was satisfactory to make conclusions for the study. Weisberg, Krosnick & Bowen (2006) recommended a response rate of 70%. According to Mugenda and Mugenda (2008), a response rate of 50 percent is adequate for analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent. Based on the assertion, the response rate was considered to be excellent.

4.3: Demographic Information

The study sought to determine the relationship between power distance, individualism and sustainable supply chain performance. The study also sought to look at the moderating role of green supply chain practices in manufacturing SMEs in Nairobi . The demographic information of the respondents included gender of the respondents, highest level of education, position in the organization, respondents' part in the supply chain, sector in the organization, years of operation, number of employees, approximate revenue, extent of allocation of financial resources, ability to access financial resources. The findings from the analysis are illustrated in the following subsections.

4.3.1: Gender of the Respondents

The study sought to establish the gender of the respondents. The results from the analysis are illustrated in the figure below as shown.

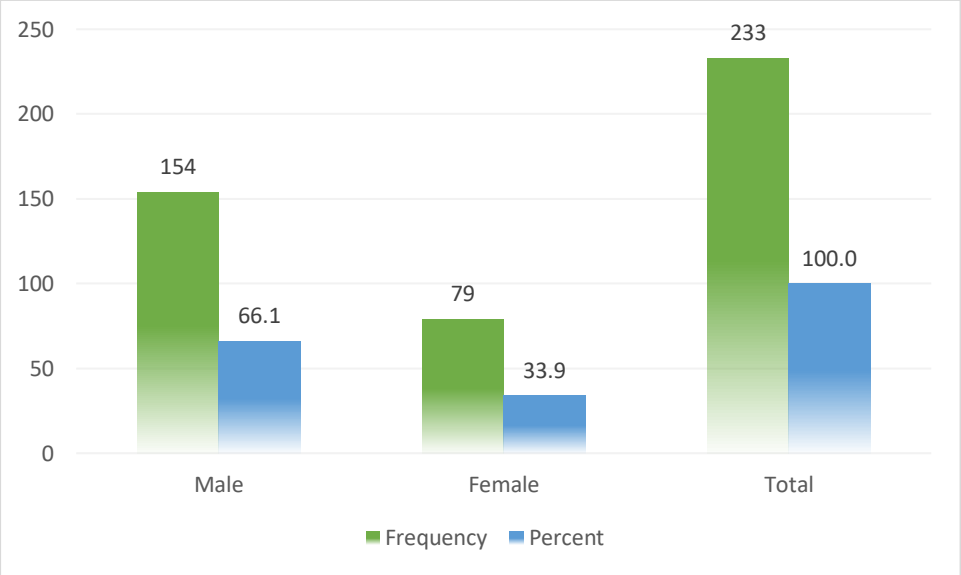


Figure 4.3: Gender of the Respondents

The findings from figure 4.3 indicate that the majority of the respondents in the study were male (66.1%), while female respondents comprised 33.9%. This gender distribution suggests a significant male dominance in the respondent pool, which may reflect industry-specific gender disparities, particularly in manufacturing SMEs in Nairobi . Research on gender representation in supply chain management and business leadership has consistently highlighted the underrepresentation of women in these sectors. According to Carter and Rogers (2018), supply chain management roles are often male-dominated due to traditional labour structures and

systemic barriers that limit female participation. Similarly, studies by Kiessling et al. (2024) suggest that gender diversity in supply chain roles can enhance sustainability initiatives by incorporating diverse perspectives and problem-solving approaches. The low representation of women in the current study may indicate persistent gender-related barriers in the manufacturing industry.

4.3.2: Highest Level of Education

The study sought to establish the respondents' highest level of education. The results from the analysis of findings are illustrated in the figure below as shown.

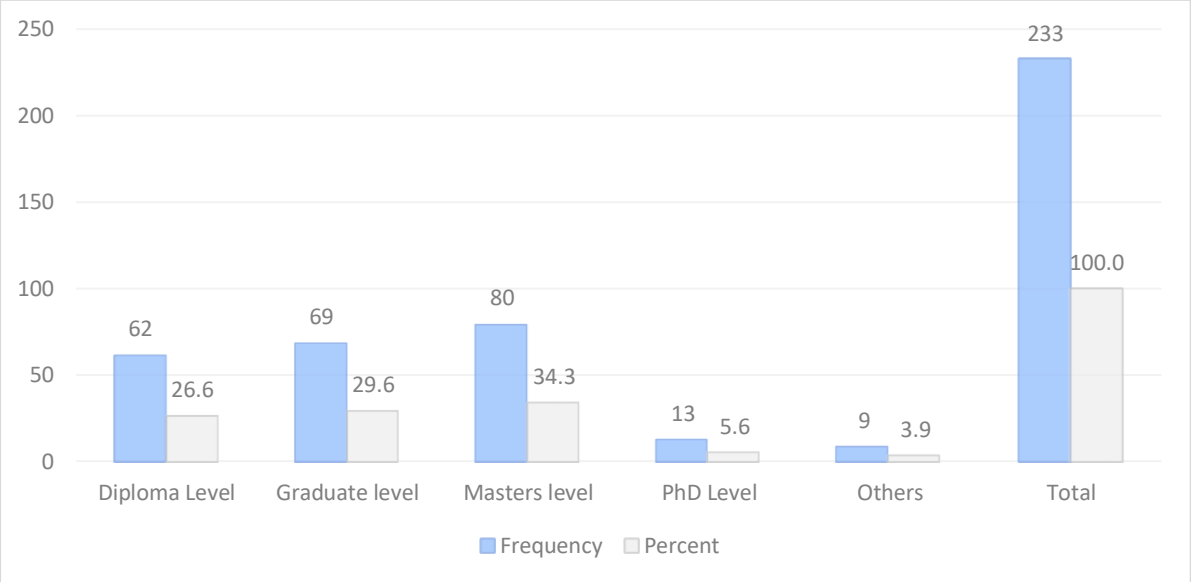


Figure 4.4: Highest Level of Education

The level of education data from figure 4.4 indicates that the majority of respondents have a Master's degree (34.3%), followed by those with a Graduate/Bachelor's degree (29.6%) and Diploma level (26.6%). A smaller proportion of respondents hold a PhD (5.6%), while 3.9% fall into the others category. The high proportion of postgraduate qualifications suggests that many professionals in this field possess advanced education, aligning with trends in supply chain and manufacturing industries where specialized knowledge in sustainability and technology-driven processes is becoming increasingly important. According to McKinnon et al. (2023), higher education levels in supply chain management correlate with increased adoption of green supply chain practices, as individuals with postgraduate qualifications tend to be more receptive to sustainability innovations and regulatory compliance.

Moreover, Aslam et al. (2021) found that educational attainment significantly influences the implementation of sustainable supply chain practices, as professionals with higher degrees are

more likely to advocate for environmentally and socially responsible supply chain processes. The data also suggests a limited representation of PhD holders (5.6%), which is consistent with broader industry trends where doctoral qualifications are less common in manufacturing SMEs due to the practical, hands-on nature of supply chain roles. However, higher education remains a critical factor in decision-making and innovation, particularly in GSC initiatives.

Khan et al. (2022) emphasize that higher educational qualifications contribute to better strategic planning, risk management, and sustainable business operations, making Master's and Bachelor's degree holders key players in driving environmental, economic, and social sustainability goals. Additionally, Wang et al. (2023) highlight that organizations with highly educated professionals exhibit greater resilience and adaptability to emerging sustainability challenges, such as climate change and digital transformation in supply chains. This distribution of educational levels highlights the importance of continuous professional development (CPD) programs in ensuring that employees at all levels are equipped with the latest knowledge and skills necessary for sustainable supply chain performance.

4.3.3: Position in the Organization

The study sought to establish from the respondents' position in the Manufacturing SMEs in Nairobi . The results from the analysis of findings are illustrated in the figure below as shown.

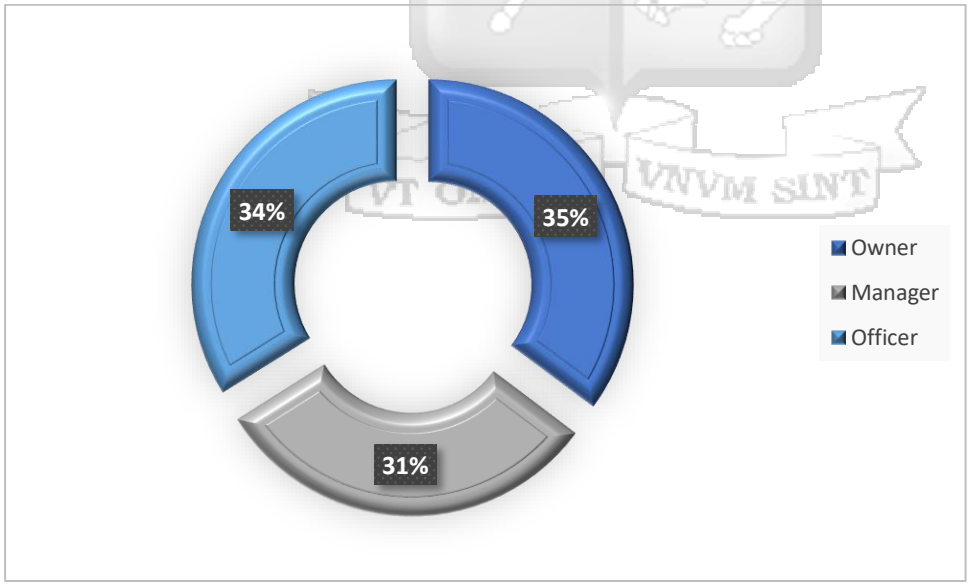


Figure 4.5: Position in the Manufacturing SMEs in Nairobi

The figure 4.5 presents the distribution of respondents based on their roles within their respective organizations. The data indicates that 35.2% of the respondents are business owners, 30.9% hold managerial positions, and 33.9% serve as officers. This relatively even distribution

suggests that insights into organizational practices, including sustainable supply chain performance, are drawn from a diverse range of decision-makers at different hierarchical levels. The significant representation of owners (35.2%) implies that many respondents are directly involved in strategic decision-making and long-term business planning, which could influence business models, investment in sustainability, and operational priorities. Additionally, the 30.9% representation of managers indicates a strong presence of mid-level leaders, responsible for executing company strategies, while the 33.9% share of officers highlights the operational workforce, who play a critical role in the implementation of supply chain activities and sustainability practices.

This hierarchical distribution aligns with studies on corporate decision-making structures and business sustainability, which emphasize the integrated role of owners, managers, and officers in organizational performance. According to Chinomona and Pooe (2023), the involvement of top leadership (owners) is crucial in fostering organizational sustainability and strategic direction, as they provide vision, policy formulation, and financial commitment to initiatives such as green supply chain practices (GSCPs). Moreover, managers serve as the bridge between strategic planning and execution, ensuring that policies are effectively implemented and aligned with organizational goals (Kotzab et al., 2023). The representation of officers (33.9%) is also significant, as empirical evidence suggests that the successful adoption of sustainability measures depends on employee involvement, engagement, and understanding of environmental, social, and governance (ESG) principles (Govindan et al., 2023). A well-distributed organizational structure such as this enhances decision-making, operational efficiency, and sustainability compliance, ensuring that both top-down and bottom-up approaches contribute to overall business performance.

4.3.4: Respondents' Distribution Across Supply Chain Functions

The study sought to establish the part to which the respondents worked in the supply chain. The results from the analysis of findings are illustrated in figure 4.6 below as shown.

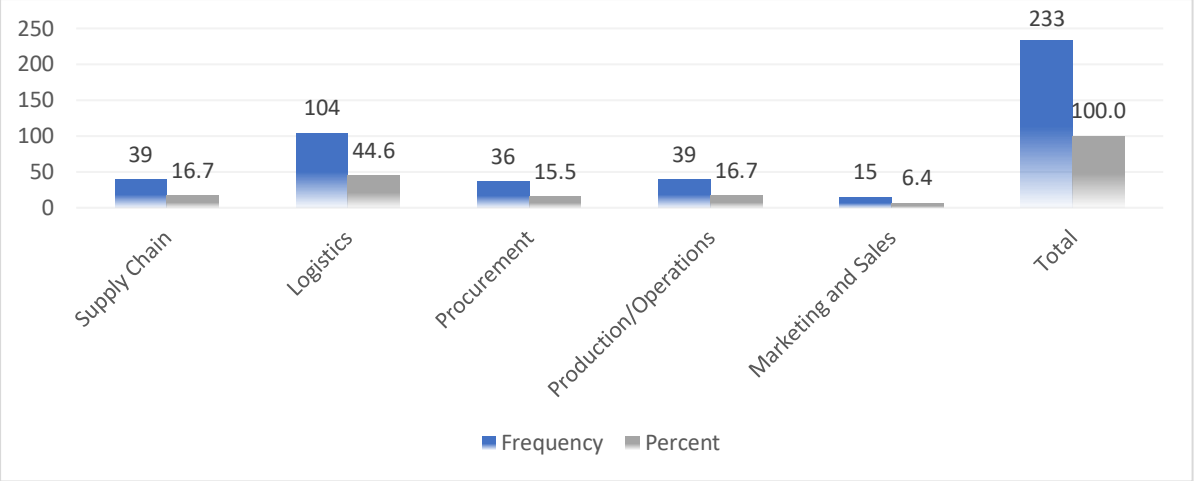


Figure 4.6: Distribution of Respondents Across Supply Chain Functions

Figure 4.6 presents the distribution of respondents based on their roles within different segments of the supply chain. The data reveals that the largest proportion of respondents (44.6%) work in logistics, followed by those in supply chain (16.7%), production/operations (16.7%), and procurement (15.5%), while marketing and sales (6.4%) has the least representation. The dominance of logistics (44.6%) suggests that a significant number of employees in the surveyed organizations are engaged in transportation, warehousing, and distribution activities, which are critical to ensuring efficient material flow and timely delivery of goods. The notable presence of supply chain, production, and procurement professionals (each between 15-17%) indicates a well-distributed workforce involved in coordinating supply chain functions, managing production processes, and sourcing raw materials. The relatively low percentage of marketing and sales professionals (6.4%) suggests that the primary focus of respondents is on operations and supply chain execution, rather than customer engagement or market expansion.

These findings align with existing literature on supply chain management structures, which highlight logistics as a crucial component of modern supply chains. According to Christopher (2022), logistics plays a central role in ensuring cost efficiency, service reliability, and responsiveness to market demands, making it a dominant function in supply chain operations. Additionally, Sharma et al. (2021) emphasize that the increasing complexity of global supply chains has placed greater reliance on logistics professionals to optimize transportation networks, reduce lead times, and manage inventory flows. The presence of procurement (15.5%) and production/operations (16.7%) personnel also supports research by Kumar et al. (2023), who argue that procurement and production efficiency are key drivers of sustainable supply chain performance, particularly in manufacturing SMEs. While marketing and sales

(6.4%) play a vital role in demand forecasting and customer relationship management, their lower representation in this dataset suggests that operational efficiency and logistics optimization are the primary focus areas for supply chain professionals in Nairobi 's manufacturing sector.

4.3.5: Sector of Operation

The study aimed to identify the specific sectors in which manufacturing SMEs operate in Kenya. Understanding sectoral distribution is essential for assessing industry-specific supply chain dynamics, challenges, and sustainability practices. The findings, as illustrated in table 4.4 below, provide insights into the diverse industrial composition of the surveyed firms, highlighting key areas of manufacturing activity and their relative representation within the sector.

Table 4.4: Sectoral Distribution

Sector	Frequency	Percentage
Automotive	55	23.6
Building, Mining and Construction	35	15
Food and Beverages	31	13.3
Energy, Electrical and Electronic	21	9
Textiles and Apparel	15	6.4
Timber wood and Furniture	15	6.4
Chemical and Allied	14	6
Paper and Board	11	4.7
Agriculture and Fresh produce	10	4.3
Pharmaceuticals and Medical Equipment	10	4.3
Plastics and Rubber	6	2.6
leather and footwear	5	2.1
Metal and Allied	5	2.1
Total	233	100

The data shows that the automotive sector (23.6%) has the highest representation, followed by building, mining, and construction (15.0%), food and beverages (13.3%), and energy, electrical, and electronic (9.0%). Other sectors, such as chemical and allied industries (6.0%), textiles and apparel (6.4%), and paper and board (4.7%), have moderate representation, while industries such as leather and footwear (2.1%) and metal and allied (2.1%) have the lowest participation.

This diverse sectoral distribution suggests that the study captures perspectives from a broad range of industries, with a dominant presence in manufacturing and industrial production. The

strong representation of the automotive sector (23.6%) aligns with recent trends in Kenya's manufacturing landscape, where the growth of vehicle assembly and automotive component production has been a key focus of industrial policies (Kenya Association of Manufacturers, 2023). According to UNIDO (2022), the construction, automotive, and food and beverage sectors are among the fastest-growing industries in Africa, driven by urbanization, infrastructure development, and consumer demand. The presence of multiple industries in the dataset also supports the findings of KAM (2023), which highlight that Kenya's manufacturing sector is diversifying, with emerging investments in energy, pharmaceuticals, and sustainable industrial practices. Understanding sectoral representation is crucial in analyzing supply chain performance, as different industries face unique challenges and sustainability concerns, influencing their approach to logistics, procurement, and production efficiency.

4.3.6: Years of Operation

The study sought to determine the operational longevity of manufacturing SMEs in Kenya, as business longevity is a critical indicator of stability, experience, and resilience in supply chain management. Understanding the age distribution of these enterprises helps in assessing market sustainability, industry challenges, and business continuity strategies. The results, as presented in figure 4.7, provide insights into the varying lifespans of the surveyed organizations, ranging from newly established businesses to well-established enterprises that have been in operation for over 20 years.

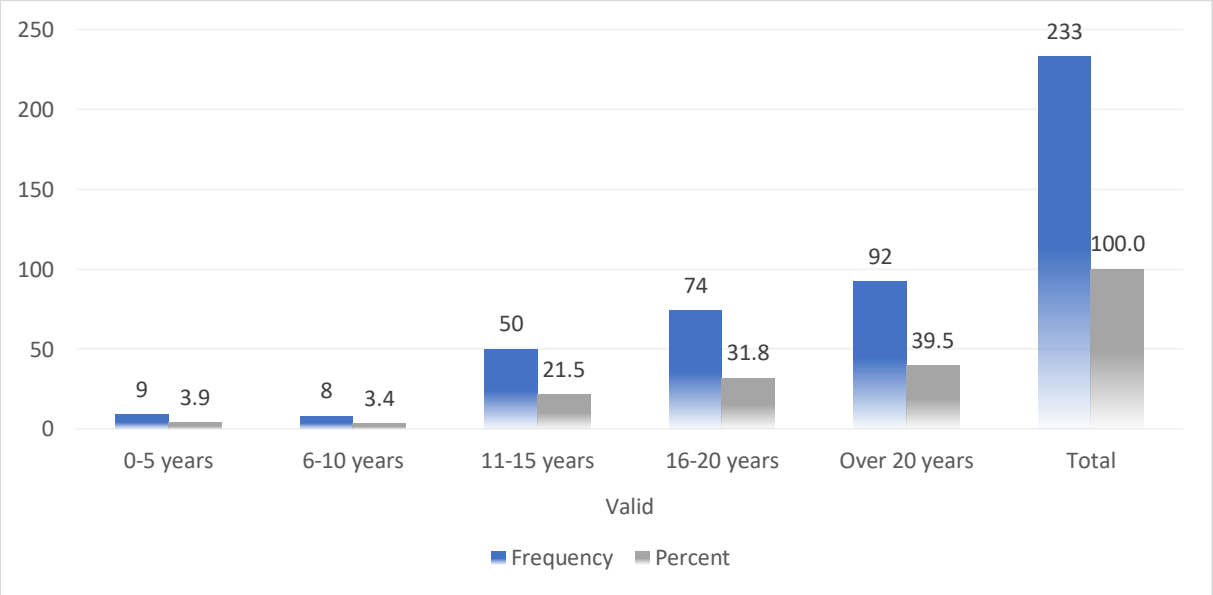


Figure 4.7: Years of Operation

The findings indicate that the majority of the surveyed SMEs (39.5%) have been in operation for over 20 years, reflecting a strong presence of long-standing businesses in Kenya's manufacturing sector. Additionally, 31.8% of the firms have been operational for 16–20 years, further reinforcing the notion that many manufacturing SMEs have successfully navigated market challenges over extended periods. According to Namusonge et al. (2022), longevity in manufacturing is often linked to effective supply chain management, financial sustainability, and the ability to adapt to regulatory and technological changes. The presence of such well-established firms suggests a stable industrial ecosystem where businesses leverage their experience, networks, and operational efficiencies to remain competitive.

Figure 4.7 highlights the presence of younger SMEs, with 3.9% of firms operating for 0–5 years and 3.4% for 6–10 years, indicating a smaller proportion of emerging businesses. This finding is consistent with studies on SME survival rates, which indicate that many new enterprises struggle to sustain operations beyond the first five years due to financial constraints, market competition, and regulatory barriers (Kariuki & Kiiru, 2023). The relatively low representation of young firms suggests that entry into the manufacturing sector may be challenging, requiring strong capital investment, supply chain networks, and strategic planning for long-term survival. Addressing these barriers through government incentives, financing programs, and capacity-building initiatives could improve the survival rate of newer SMEs and promote sectoral growth.

4.3.7: Number of Employees

The study sought to determine the workforce size of the surveyed manufacturing SMEs in Kenya, as the number of employees is a key indicator of business scale, operational capacity, and economic contribution. Understanding employment distribution among SMEs provides insights into the labour dynamics, productivity levels, and potential for job creation within the sector. The results, as shown in figure 4.8, illustrate the firm sizes in terms of employee numbers, ranging from micro-enterprises to larger small and medium-sized firms.

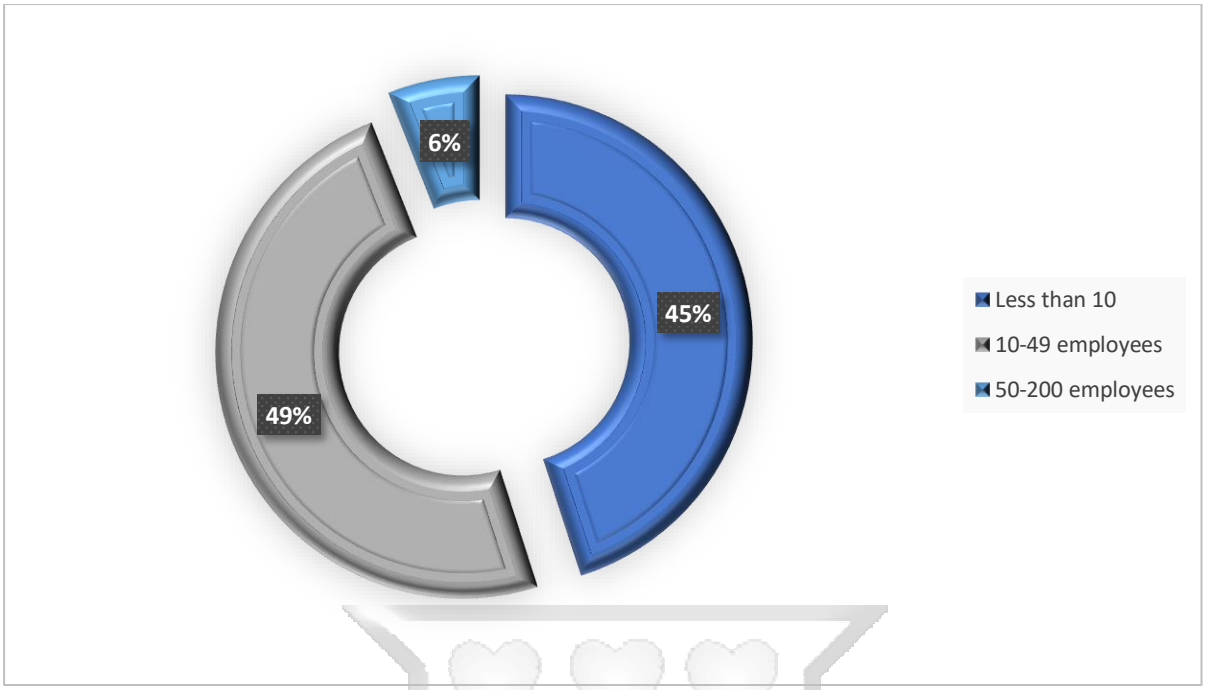


Figure 4.8: Number of Employees

The findings reveal that 45.1% of the SMEs have less than 10 employees, while 48.9% have between 10 and 49 employees, indicating that the majority (94%) of the surveyed firms are micro and small enterprises. This aligns with the Kenya National Bureau of Statistics (KNBS, 2023), which states that most SMEs in Kenya employ fewer than 50 workers, reinforcing their classification as small-scale enterprises. These firms often face resource constraints, including limited access to capital, technological inefficiencies, and supply chain challenges, which affect their ability to scale. According to Abor & Quartey (2022), small businesses play a crucial role in economic development, but their growth is often hindered by regulatory burdens, market volatility, and limited workforce capabilities.

On the other hand, only 6% of the surveyed firms have between 50 and 200 employees, indicating a low representation of medium-sized enterprises in the manufacturing sector. This suggests that many SMEs struggle to transition into larger operations, a phenomenon often linked to financial constraints, inadequate infrastructure, and difficulty in accessing regional and international markets (Mungai & Ouma, 2023). Medium-sized enterprises are critical drivers of industrial expansion and innovation, and their limited representation highlights the need for government interventions, capacity-building programs, and investment incentives to help SMEs scale up and improve employment generation.

4.3.8: Approximate Revenue for the Manufacturing SME

The study aimed to evaluate the approximate revenue distribution of manufacturing SMEs in Kenya, as revenue levels serve as a key indicator of business performance, financial stability, and market competitiveness. The results from the analysis of findings are illustrated in figure 4.9 below as shown.

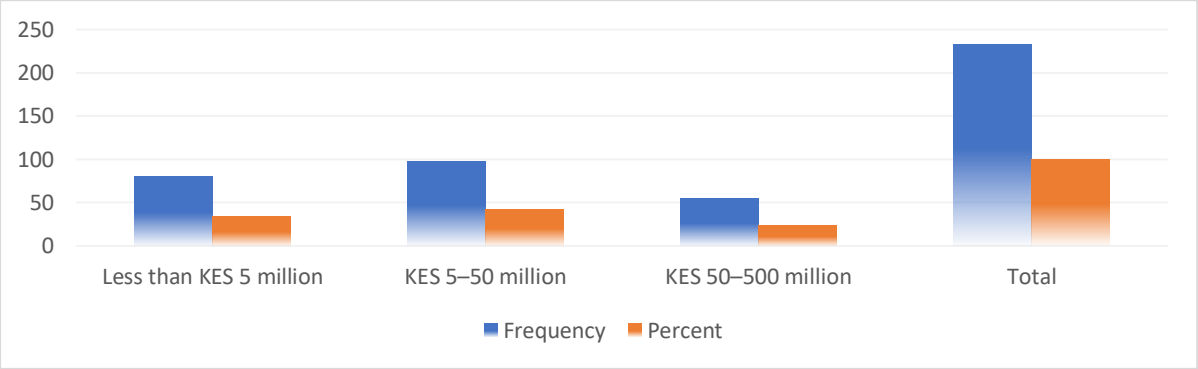


Figure 4.9: Approximate Revenue for the Manufacturing SME

The findings indicate that the majority of SMEs (76.4%) generate revenues below KES 50 million, with 34.3% earning less than KES 5 million and 42.1% falling within the KES 5–50 million range. This aligns with previous research, such as KNBS (2023), which highlights that most SMEs in Kenya operate on relatively low revenues due to capital limitations, constrained market reach, and fluctuating demand. According to Wanjiru and Otieno (2022), SMEs in the manufacturing sector face significant financial challenges, including high operational costs, limited access to credit, and supply chain disruptions, which hinder their ability to scale revenue significantly. This revenue distribution highlights the vulnerability of small businesses and the need for financial interventions and capacity-building initiatives to improve their profitability.

SMEs that reported annual revenues between KES 50–500 million represent 23.6%, indicating a small but financially robust segment within the sector. These firms are likely to have established market presence, diversified supply chain networks, and stronger financial management practices, enabling them to achieve higher revenue levels (Muthoki & Kamau, 2023). Studies suggest that scaling SMEs into higher revenue brackets requires strategic investments in technology, process efficiency, and market expansion (Kariuki et al., 2023). Given the relatively low percentage of high-revenue SMEs, policymakers and financial institutions should focus on enhancing access to credit, fostering innovation, and supporting

infrastructure development to enable more businesses to transition into higher revenue categories and drive industrial growth in Kenya.

4.3.9: Allocation of Financial Resources to Supply Chain

The study sought to assess the extent to which manufacturing SMEs in Kenya allocate financial resources toward sustainable supply chain initiatives (SSCI). Financial investment in sustainability plays a critical role in ensuring that firms adopt environmentally friendly, socially responsible, and economically viable supply chain practices. The results in figure 4.10 illustrate the varying degrees of commitment among organizations in financing sustainability efforts, ranging from moderate to very high levels of financial allocation.

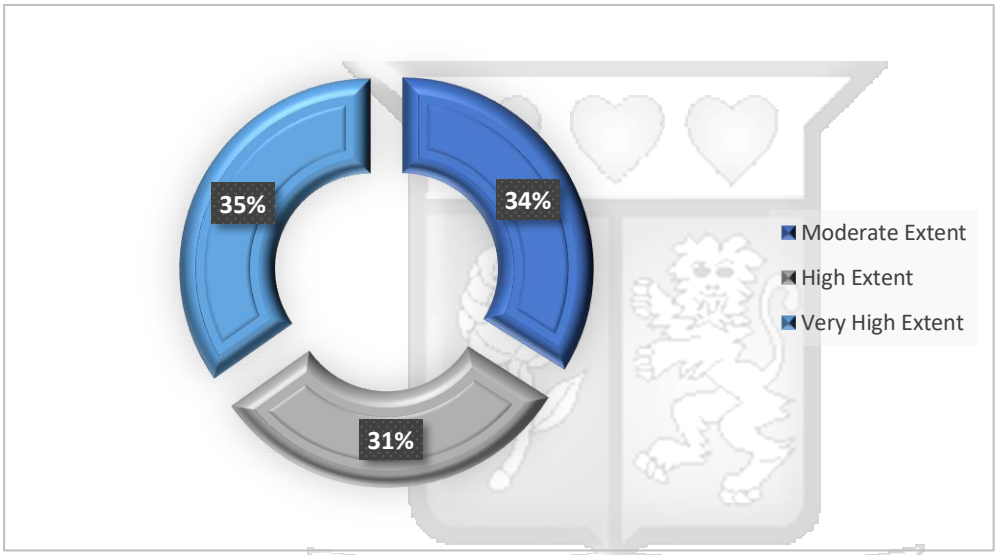


Figure 4.10: Allocation of Financial Resources to the Supply Chain

The findings indicate that 34.8% of SMEs allocate financial resources to a very high extent, while 31.3% invest at a high extent, meaning that a majority (66.1%) of firms demonstrate strong financial commitment to sustainability initiatives. This aligns with global trends, where businesses are increasingly integrating sustainability into supply chain management due to rising regulatory pressures, consumer awareness, and corporate responsibility goals (Carter & Rogers, 2023). Studies by Govindan et al. (2022) also highlight that firms that allocate more financial resources toward sustainable supply chain management (SSCM) often experience cost savings, enhanced brand reputation, and regulatory compliance benefits, making sustainability a long-term competitive strategy.

SMEs that only invest to a moderate extent were at 33.9%, suggesting that financial constraints, lack of technical expertise, or limited awareness may hinder deeper sustainability adoption. Research by Dubey et al. (2023) indicates that SMEs often face challenges in fully

implementing sustainability in the supply chain due to high initial investment costs, limited economies of scale, and uncertain returns on investment. To enhance financial commitment to SSCI, policymakers and financial institutions should offer incentives such as green financing, tax reliefs, and capacity-building programs, which could enable SMEs to expand their sustainability initiatives and improve overall environmental and operational resilience.

4.3.10: Organization's Ability to Access Financial Support

The study sought to evaluate the ability of manufacturing SMEs in Kenya to access external financial support for sustainability projects, including loans and grants. Access to finance is a crucial factor influencing the adoption and implementation of sustainable supply chain initiatives, as it determines the extent to which firms can invest in eco-friendly technologies, green production processes, and regulatory compliance measures. The results, as shown in table 4.5, highlight varying levels of financial accessibility among the surveyed firms.

Table 4.5: Organization's Ability to Access Financial Support for Sustainability

	Frequency	Percentage
Neutral	46	19.7
Acceptable	108	46.4
Very Acceptable	79	33.9
Total	233	100

The findings indicate that 33.9% of SMEs perceive their ability to secure external funding as very acceptable, while 46.4% consider it acceptable, meaning that a majority (80.3%) report relatively positive access to financial resources for sustainability projects. This aligns with research by OECD (2023), which suggests that governments and financial institutions are increasingly providing green financing options, grants, and subsidies to support sustainability initiatives, particularly in developing economies. Furthermore, Sahoo & Dutta (2022) found that SMEs with strong financial literacy, well-structured business models, and established networks tend to have higher success rates in securing sustainability-related funding.

The findings also showed that 19.7% of SMEs remain neutral, indicating potential challenges in accessing financial support. Research by Kihara et al. (2023) highlights that many SMEs still struggle with bureaucratic loan application processes, high collateral requirements, and a lack of awareness of available green financing opportunities. To bridge this gap, policymakers and financial institutions should streamline loan access, offer financial literacy training, and create SME-specific sustainability funding programs. Strengthening these support mechanisms

can enhance SMEs' ability to implement sustainability in the supply chain, ensuring long-term environmental and economic resilience.

4.4: Main Research Findings

The study sought to determine the relationship between individualism and power distance as cultural dimensions on the sustainable performance of supply chains under the moderating role of green supply chain management practices in manufacturing SMEs in Nairobi. The respondents were asked to rate how they felt about different variables related to the different corporate governance indicators on a five-point Likert scale. The range was from strongly agree (5) to 'strongly disagree' (1. The score of 1 represented "strongly disagree", 2 represented "disagree", 3 represented "neutral", 4 represented "agree," and five represented "strongly agree."

4.4.1: Power Distance

The study sought to determine the respondents' perceptions of statements relating to power distance in manufacturing SMEs. Table 4.6 below shows the findings of from the respondents.

Table 4.6: Power Distance

	N	Mean	Std. Deviation
Decisions related to Supply chain sustainability are made by top management without consulting lower-level employees.	233	3.4163	1.50948
There is a clear chain of command that affects the implementation of sustainability in the supply chain.	233	3.3219	1.59857
Employees are empowered to make decisions related to sustainability in the supply chain.	233	3.5880	1.49489
Employees are encouraged to provide feedback on issues of sustainability in the supply chain.	233	3.7897	1.38448
There is a shared responsibility for implementing sustainability in the supply chain across all levels of the organization	233	3.4592	1.47078
Decision-making in my organization is centralized, with most power held by a single individual or group at the top of the hierarchy.	233	3.4850	1.52309
The decision-making in my organization supports sustainability in the supply chain.	233	3.5322	1.45034
Employees are involved in the decision-making process related to sustainability in the supply chain in my organization	233	3.5536	1.49940
Decision-making mechanisms in my organization consider the environmental and social impacts of supply chain activities.	233	3.4678	1.49425
Top-level managers have a significant influence on the implementation of sustainability in the supply chain in my organization	233	3.4592	1.48826

Valid N (listwise)	233		

Source: Author, (2025)

The descriptive statistics reveal significant insights into how decision-making structures influence sustainable supply chain performance (SSCPs) within organizations. The mean score of 3.4163 with a standard deviation of 1.50948 suggests that while decisions related to sustainability are often made by top management without consulting lower-level employees, there is a moderate variation in responses, indicating that some firms adopt a more inclusive approach. Additionally, the mean score of 3.3219 for the statement on the chain of command affecting sustainability implementation suggests that organizational hierarchy shapes supply chain sustainability efforts, aligning with Hofstede's (2023) cultural dimensions' theory, which emphasizes that high power distance organizations often exhibit centralized decision-making. However, excessive hierarchical control may limit flexibility and slow down the adoption of sustainability.

Employee participation in sustainable supply chain decision-making emerges as a crucial factor in determining the effectiveness of sustainability strategies. The mean score of 3.5880 with a relatively lower standard deviation of 1.49489 indicates that while employees are moderately empowered to make decisions on SSCPs, the extent of their involvement varies. Encouragingly, a higher mean score of 3.7897 suggests that employees are actively encouraged to provide feedback on sustainability issues, supporting findings by Gualandris & Kalchschmidt (2021) that open feedback loops lead to continuous improvement in green supply chain initiatives. This further emphasizes the importance of employee engagement in fostering an organizational culture that prioritizes sustainability, as noted by Dubey et al. (2022), who found that firms with high employee involvement in sustainability programs tend to experience greater operational efficiencies and long-term cost savings. A shared responsibility for implementing SSCPs across different levels of an organization appears to be present, as indicated by a mean score of 3.4592 and a standard deviation of 1.47078. This suggests that sustainability efforts are not solely top-down but involve multiple stakeholders within the organization. However, the relatively moderate mean score of 3.4850 for centralized decision-making reflects that some firms still have a rigid hierarchical structure, where power is concentrated at the top. Porter & Kramer (2023) argue that while centralized sustainability strategies ensure consistency with corporate goals, excessive control can limit adaptability, making it harder for firms to respond effectively to sustainability challenges. These findings

highlight the need for organizations to strike a balance between leadership-driven sustainability policies and participatory approaches that leverage the expertise of employees at all levels.

The extent to which decision-making supports SSCPs is reflected in the mean score of 3.5322, indicating that sustainability considerations are integrated into business strategies, albeit to varying degrees. Employee involvement in sustainability decision-making also scored a mean of 3.5536, reinforcing the idea that participatory governance enhances the effectiveness of sustainability initiatives. Research by Carter & Rogers (2022) supports this, indicating that firms that actively engage employees in sustainability planning and execution tend to perform better in long-term environmental and financial sustainability goals. Moreover, organizations that prioritize shared responsibility for sustainability implementation, as reflected in the mean score of 3.4678, tend to incorporate environmental and social concerns into their supply chain operations, aligning with global trends in ESG (Environmental, Social, and Governance) integration (McKinsey & Company, 2023).

The influence of top-level managers on SSCP implementation is evident from a mean score of 3.4592, suggesting that senior leadership plays a decisive role in driving sustainability efforts within organizations. This finding is consistent with research by Wang et al. (2023), who argue that managerial commitment is essential in ensuring sustainability strategies are effectively embedded in an organization's supply chain operations. While leadership support is critical, firms should foster a more decentralized approach to decision-making, where both strategic and operational-level employees are actively engaged in sustainability efforts.

4.4.2: Individualism

The study sought to determine the respondents opinion on individualism and supply chain performance in the manufacturing SMEs. The table 4.7 below shows the findings of from the respondents.

Table 4.7: Individualism

	N	Mean	Std. Deviation
Employees are empowered and encouraged to take actions that promote sustainability in the supply chain.	233	3.4421	1.50211
Employees are free to make decisions about sustainability in the supply chain	233	3.2918	1.59222
Opportunities are provided for employees to develop their skills and knowledge related to sustainability in the supply chain.	233	3.5794	1.44554
Feedback and input from employees related to sustainability in the supply chain are valued by giving recognition and rewards.	233	3.7854	1.37288

Employees are encouraged to work as a team to achieve individual goals.	233	3.4592	1.51410
Managers in the organizations use transparent communication channels to share information about supply chain sustainability initiatives.	233	3.3777	1.50683
The communication practices in the organization support collaboration and coordination among different departments involved in supply chain sustainability efforts.	233	3.5708	1.48423
Employees feel comfortable sharing feedback and ideas about sustainable supply chain sustainability with their managers.	233	3.5021	1.43876
Formal communication channels are preferred to informal communication channels in sustainability in the supply chain.	233	3.4292	1.50155
Valid N (listwise)	233		

The descriptive statistics presented in table 4.7 on Individualism provide key insights into employee autonomy, communication, and teamwork in sustainability in the supply chain. The mean score of 3.4421 for the statement that employees are empowered and encouraged to take actions that promote sustainability in the supply chain, with a standard deviation of 1.50211, suggests that while some level of empowerment exists, it is not uniformly distributed across organizations. The slightly lower mean of 3.2918 for employees being free to make decisions about sustainability in the supply chain indicates that individual autonomy remains somewhat constrained, possibly due to managerial oversight or hierarchical decision-making structures. This finding aligns with Hofstede's (2023) cultural dimensions theory, which suggests that in high power distance environments, decision-making authority tends to be concentrated at the top, limiting lower-level employees' autonomy in strategic initiatives.

Opportunities for employee skill development in sustainability appear to be moderately available, as reflected in a mean score of 3.5794, indicating that organizations invest in sustainability training but with some variability (Std. Dev = 1.44554). This supports research by Govindan et al. (2023), which highlights that capacity-building efforts are essential in fostering an environmentally conscious workforce. Additionally, a higher mean of 3.7854 for the value placed on employee feedback through recognition and rewards suggests that many organizations understand the motivational impact of incentives in sustainability adoption. This is consistent with Gualandris & Kalchschmidt (2021), who found that rewarding employee contributions in sustainability efforts enhances engagement and compliance with green supply chain initiatives.

Teamwork and managerial communication practices are also central themes in the findings. A mean score of 3.4592 suggests that employees are encouraged to work collaboratively to achieve sustainability goals, reinforcing the idea that collective responsibility enhances the effectiveness of SSCPs. However, the transparency of managerial communication regarding sustainability initiatives received a slightly lower mean of 3.3777, indicating that while information is shared, gaps in clarity or accessibility may exist. According to Choi et al. (2023), transparent communication is crucial for aligning employee efforts with corporate sustainability objectives, and firms that maintain open, consistent communication see higher levels of employee participation in green supply chain practices .

The role of formal and informal communication channels in SSCPs is also highlighted. A mean of 3.5708 suggests that organizational communication practices generally support collaboration across departments, although some variability remains (Std. Dev = 1.48423). Employees also reported feeling moderately comfortable sharing sustainability-related feedback with managers (Mean = 3.5021), reflecting a culture of inclusivity in decision-making. However, the preference for formal communication channels (Mean = 3.4292, Std. Dev = 1.50155) suggests that organizations still rely heavily on structured reporting and documentation rather than informal discussions for sustainability-related matters. While formal channels ensure accountability and standardization in sustainability strategies, research by Porter & Kramer (2023) suggests that a hybrid communication approach, incorporating both formal mechanisms and informal dialogue, leads to greater innovation and employee-driven sustainability improvements.

The findings indicate that while some level of individualism exists in decision-making related to sustainable supply chain performance, organizations still maintain a structured approach to communication, collaboration, and incentives. To enhance employee-driven sustainability efforts, firms should strive for a balance between managerial oversight and employee autonomy, improve transparency in communication, and foster a reward-based culture that recognizes individual contributions to sustainability goals.

4.4.3: Green Supply Chain Practices

The study sought to establish the respondents opinion on green supply chain practices. The results from the analysis of findings are illustrated in the table 4.8 below as shown.

Table 4.8: Green Supply Chain Practices

	N	Mean	Std. Deviation

Green Manufacturing			
My organization uses clean energy such as renewable energy in our manufacturing processes	233	3.4764	1.55103
Waste reduction strategies are implemented in manufacturing to promote sustainability.	233	3.2876	1.55604
The company regularly updates its manufacturing processes to be more environmentally friendly.	233	3.5794	1.48089
There is an emphasis on reducing the carbon footprint of manufacturing activities.	233	3.7897	1.39379
Lean manufacturing practices are adopted to minimize waste and improve sustainability.	233	3.4335	1.46101
Green Procurement			
The company prefers suppliers who have green certifications or eco-friendly practices.	233	3.4077	1.50325
Sustainable materials are prioritized in procurement decisions.	233	3.4979	1.46253
Procurement teams are trained in sustainable sourcing practices.	233	3.4721	1.47985
My organization assesses the environmental impact of products and services before purchasing.	233	3.4292	1.51868
Green procurement has led to cost savings and improved supply chain sustainability.	233	3.4764	1.55103
Eco-Design			
Products are designed with energy efficiency in mind.	233	3.3820	1.57705
The company focuses on creating recyclable or reusable products.	233	3.5494	1.49667
A life cycle assessment is conducted to measure the environmental impact of new products.	233	3.5837	1.45717
Products are designed to use fewer raw materials and reduce waste.	233	3.5794	1.47213
Environmental considerations are embedded in every stage of the product design process.	233	3.4378	1.54996
Valid N (listwise)	233		

The descriptive statistics provide key insights into green manufacturing, green procurement, and eco-design practices within organizations. The mean score of 3.4764 for the use of clean energy sources in manufacturing, with a standard deviation of 1.55103, suggests that while many firms have integrated renewable energy into their operations, the level of adoption still varies significantly across organizations. Similarly, waste reduction strategies, with a mean of 3.2876, indicate moderate implementation, reinforcing findings from Govindan et al. (2023) that while sustainable manufacturing practices are gaining traction, many firms still face challenges related to cost, technological adaptation, and regulatory compliance. Additionally, the regular updating of manufacturing processes to be environmentally friendly, with a mean

of 3.5794, suggests that many firms recognize the importance of continuous improvements in sustainability, aligning with Porter & Kramer (2023), who emphasize that regular innovation in sustainable practices enhances long-term competitiveness.

In terms of carbon footprint reduction, the mean score of 3.7897 indicates that firms prioritize reducing emissions in their manufacturing activities, though some variability remains (Std. Dev = 1.39379). This aligns with Carter & Rogers (2022), who argue that lowering carbon emissions not only improves environmental performance but also enhances corporate reputation and regulatory compliance. Additionally, the adoption of lean manufacturing practices, with a mean of 3.4335, suggests that firms are implementing efficiency-driven processes to minimize waste and improve sustainability, a principle widely supported by Womack & Jones (2023), who found that lean practices enhance resource optimization and long-term cost savings.

Shifting focus to green procurement, the preference for suppliers with green certifications or eco-friendly practices, with a mean of 3.4077, suggests that while organizations are progressively incorporating sustainable procurement policies, there is still room for more stringent supplier selection criteria. This aligns with Gualandris & Kalchschmidt (2021), who highlight that supplier sustainability credentials significantly influence an organization's overall environmental performance. Additionally, prioritizing sustainable materials in procurement decisions (mean = 3.4979) reinforces the notion that firms understand the importance of responsible sourcing, though challenges such as cost implications and availability of eco-friendly materials may affect full adoption (Dubey et al., 2022). Furthermore, the training of procurement teams in sustainable sourcing (mean = 3.4721) suggests that companies are investing in capacity-building initiatives to enhance sustainable procurement competencies, which is crucial in ensuring successful green supply chain transitions.

The mean score of 3.3820 for energy-efficient product design suggests moderate consideration for energy sustainability in product development, which aligns with Choi et al. (2023), who argue that energy efficiency is a key factor in designing environmentally responsible products. The focus on recyclable or reusable products, with a mean of 3.5494, indicates a growing commitment to circular economy principles, supporting research by Ellen MacArthur Foundation (2023), which emphasizes that product recyclability is critical in reducing long-term environmental impacts. The use of life cycle assessments to measure environmental impacts (mean = 3.5837) suggests that many firms recognize the importance of holistic

environmental evaluation in design, aligning with Wang et al. (2023), who found that integrating life cycle assessments into product design leads to greater sustainability improvements.

The findings indicate that while firms are making notable progress in green manufacturing, green procurement, and eco-design, there is a need for greater investment, policy reinforcement, and technological integration to maximize SSCP. Strengthening supplier sustainability requirements, enhancing lean and energy-efficient manufacturing, and embedding circular economy principles in design will be crucial in advancing sustainable supply chain performance.

4.4.4: Sustainable Supply Chain Performance

The study also sought to establish the respondent's opinion on statements relating to supply chain performance in the Manufacturing SMEs. The results from the analysis of findings are illustrated in the table 4.9.

Table 4.9: Sustainable Supply Chain Performance

	N	Mean	Std. Deviation
Environmental Performance			
My organization prioritizes the reduction of greenhouse gas emissions in the supply chain.	233	4.0429	.84988
My organization manages its water usage and waste generation in the supply chain.	233	3.9142	.82599
My organization seeks to invest in environmentally friendly projects.	233	4.0687	.81182
My organization recycles waste produced by supply chain operations.	233	4.1159	.77089
My organization complies with environmental standards in all aspects of our supply chain operations.	233	3.9657	.80870
Economic Performance			
Adopting sustainable practices has improved our organization's position in the competitive market.	233	3.9399	.80718
Our focus on sustainability has helped us mitigate financial risks associated with regulatory compliance	233	4.0644	.83572

The organization recycles waste produced by supply chain operations.	233	4.0386	.82695
We comply with environmental standards in all aspects of our supply chain operations.	233	4.0043	.82784
The company invests in eco-friendly projects to enhance sustainability.	233	3.9742	.80902
Social Performance			
My organization considers sustainable and ethical sourcing practices in the supply chain operations.	233	3.9227	.82161
The company ensures fair labour practices within its supply chain.	233	3.9871	.80666
My organization promotes social responsibility in its supply chain activities.	233	4.0300	.79543
My organization ensures the health and safety of workers in its sustainable supply chain operations.	233	4.0730	.82462
The development and well-being of communities surrounding the organization are prioritized.	233	3.9957	.82784
Valid N (listwise)	233		

The descriptive statistics in Table 4.9 provide insights into environmental, economic, and social performance within sustainable supply chain operations. The environmental performance metrics reveal strong commitments to reducing greenhouse gas emissions (Mean = 4.0429, Std. Dev = 0.84988) and water usage and waste management (Mean = 3.9142, Std. Dev = 0.82599). These findings suggest that organizations prioritize sustainability initiatives that mitigate their ecological footprint, aligning with Carter & Rogers (2022), who emphasize that environmentally responsible supply chain practices enhance long-term efficiency and regulatory compliance. Furthermore, investment in environmentally friendly projects (Mean = 4.0687) and waste recycling (Mean = 4.1159) indicate a growing adoption of circular economy principles, which Ellen MacArthur Foundation (2023) states is crucial for enhancing resource efficiency and reducing landfill waste. Compliance with environmental standards, with a mean of 3.9657, further supports the idea that organizations are aligning with regulatory sustainability frameworks, reinforcing the findings of Govindan et al. (2023) that businesses increasingly integrate environmental governance into supply chain decision-making.

In terms of economic performance, the findings suggest that adopting sustainability practices has improved organizations' market position (Mean = 3.9399, Std. Dev = 0.80718), reflecting the growing trend of sustainability-driven competitive advantage. According to Porter & Kramer (2023), organizations that integrate sustainable strategies into their supply chains often experience enhanced customer trust, operational efficiency, and brand loyalty. The ability to mitigate financial risks through sustainability compliance (Mean = 4.0644) further reinforces the economic benefits of sustainability, as businesses that comply with environmental and social regulations tend to experience lower financial penalties and greater investment attractiveness (McKinsey & Company, 2023). Additionally, recycling initiatives within operations (Mean = 4.0386) indicate that firms recognize the cost-saving potential of resource conservation, aligning with findings by Gualandris & Kalchschmidt (2021), who argue that companies that implement waste reduction strategies often experience improved cost efficiency and supply chain resilience.

The social performance metrics demonstrate strong commitments to ethical sourcing and fair labour practices. Organizations scored a mean of 3.9227 for considering sustainable and ethical sourcing practices, highlighting efforts to ensure that procurement decisions align with corporate social responsibility (CSR) goals. This is supported by Dubey et al. (2022), who assert that companies that engage in sustainable sourcing build stronger supplier relationships and reduce risks associated with unethical labour practices. Furthermore, ensuring fair labour practices (Mean = 3.9871) and promoting social responsibility (Mean = 4.0300) suggests that organizations actively integrate social sustainability into their supply chain models, which aligns with Wang et al. (2023), who found that companies that invest in labour welfare and social engagement tend to experience higher employee satisfaction and productivity. The commitment to health and safety in supply chain operations (Mean = 4.0730) reflects compliance with international labour standards, reinforcing studies by OECD (2023) that emphasize the importance of occupational safety regulations in fostering sustainable business operations. Additionally, the emphasis on community development and well-being (Mean = 3.9957) suggests that organizations recognize their broader social impact, aligning with corporate sustainability frameworks that prioritize local community engagement as part of ethical supply chain management (Sahoo & Dutta, 2022).

The findings indicate a strong commitment to environmental, economic, and social sustainability within supply chain operations. However, while organizations demonstrate high compliance with sustainability standards, continued investment in green innovation, ethical

labour practices, and resource optimization will be necessary to enhance long-term SSCP. To maximize the benefits of sustainable supply chain initiatives, organizations should adopt comprehensive sustainability strategies that balance environmental responsibility, economic viability, and social well-being.

4.5: Diagnostic Tests

The study performed tests on statistical assumptions, i.e. tests of regression assumption and the statistics used. This included tests of sampling adequacy, normality and multicollinearity tests

4.5.1: Sampling Adequacy Tests

Kaiser-Meyer-Olkin Measure (KMO) and Bartlett's Test of Sphericity tests were conducted to establish of data's sampling adequacy. KMO measure varies between 0 and 1, and values closer to 1 are better, with a threshold of 0.5. Williams, Brown and Onsman (2012) stated that KMO of 0.50 is an acceptable degree for sampling adequacy. Bartlett's Test of Sphericity tests analyses whether the samples are from populations with equal variances. Bartlett's test significance of 0.05 or less further indicates an acceptable degree of sampling adequacy; the sample is adequate, factorable and additional analysis beyond descriptive can be done. The KMO measures of sampling adequacy produced values between 0.585 and 0.687, while Bartlett's test of sphericity had a consistent significance of $p < .001$, which depicted and confirmed sampling adequacy.

Table 4.10: KMO and Bartlett's Test

Scale	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
		Approx. Chi-Square	Df	Sig.
Power Distance	.585	74.437	233	.000
Individualism	.650	429.893	233	.000
Green Supply Chain Practices	.687	99.893	233	.000

4.5.2: Normality Test

Normality was tested using the Levine's test which has power to detect departure from normality due to either skewness or kurtosis or both. Its statistic ranges from zero to one and figures higher than 0.05 indicate the data is normal (Razali & Wah, 2011). Levine's test assesses whether data is normally distributed.

From the table 4.11, Power Distance (p = .231), Individualism (p = .228) and Green Supply Chain Practices (p = .221). This owes to p-values higher than 0.05, and the researcher concludes that the sample data follows a normal distribution.

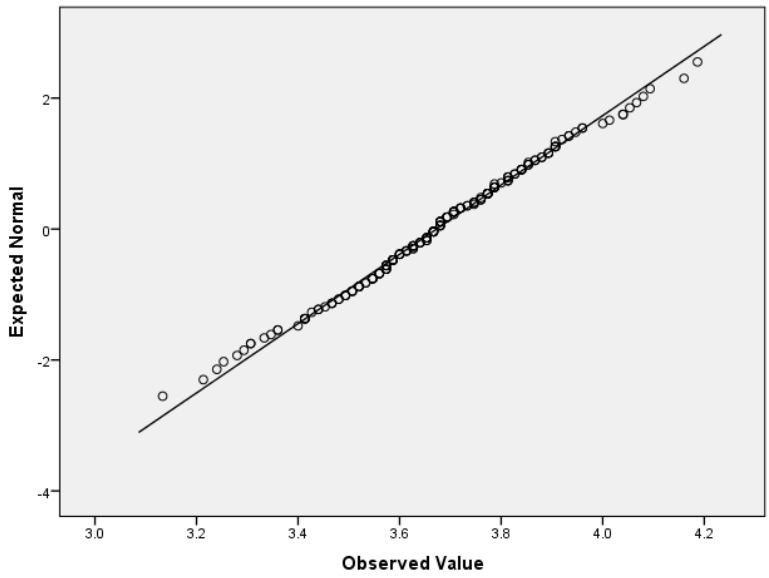


Figure 4.11: Normality plot

Table 4.11: Levine's Test

Variable	Statistic	Df	Sig.
Power Distance	.699	233	.231
Individualism	.653	233	.228
Green Supply Chain Practices	.683	233	.221

4.5.3: Multicollinearity Test

Multicollinearity was tested by computing the Variance Inflation Factors (VIF) and their reciprocals, the tolerance. It is a situation in which the predictor variables in a multiple regression analysis are themselves highly correlated, making it difficult to determine the actual contribution of respective predictors to the variance in the dependent variable. Thus, collinearity diagnostics measure how much regressors are related to other regressors and how

this affects the stability and variance of the regression estimates. The existence of multicollinearity is a vital problem in applying multiple time series regression model. Multicollinearity is a situation in which independent variables in the regression model are highly intercorrelated. Multicollinearity inflates the variances of the parameter estimates, and hence, this may lead to a lack of statistical significance of individual predictor variables even though the overall model may be significant.

To detect for multicollinearity, the study examined the correlation matrix or by using Variance Inflation Factor (VIF) as shown in table 4.12. The Variance Inflation Factor (VIF) quantifies the severity of multicollinearity in an ordinary least squares regression analysis. VIF's greater than 10 are a sign of multicollinearity; the higher the value of VIF's, the more severe the problem. Results show that all the variables had a variance inflation factors (VIF) of less than 10: Power Distance (1.575), Individualism (2.070) and Green Supply Chain Practices (1.669). This implies that there was no collinearity with the variables thus all the variables were maintained in the regression model.

Table 4.12 Collinearity Statistics

Variables	**Tolerance**	**VIF**
Power Distance	.635	1.575
Individualism	.483	2.070
Green Supply Chain Practices	.599	1.669

Source: Author, (2025)

4.6: Bivariate Linear Correlation Analysis

The correlation between the variables was as shown using linear correlation analysis. The results are presented in Table 4.14.

Table 4.13: Bivariate Linear Correlation Analysis

		Power Distance	Individualism	Green Supply Chain Practices	Sustainable Supply Chain Performance
Power Distance	Pearson Correlation	1	.845**	.733**	.667**
	Sig. (2-tailed)		.000	.000	.000

	N	233	233	233	233
Individualism	Pearson Correlation	.845**	1	.680**	.631**
	Sig. (2-tailed)	.000		.000	.000
	N	233	233	233	233
Green Supply Chain Practices	Pearson Correlation	.733**	.680**	1	.807**
	Sig. (2-tailed)	.000	.000		.000
	N	233	233	233	233
Sustainable Supply Chain Performance	Pearson Correlation	.667**	.631**	.807**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	233	233	233	233

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

The correlation analysis provides insights into the relationships between Power Distance, Individualism, and Green Supply Chain Practices with Sustainable Supply Chain Performance. The findings reveal that all three independent variables are significantly correlated with Supply Chain Performance at the 0.01 level, indicating strong associations. Among them, Green Supply Chain Practices (GSCPs) exhibit the highest correlation (r = 0.807), suggesting that organizations that adopt environmentally sustainable practices, such as green procurement, eco-design, and waste reduction, tend to have higher supply chain performance. This aligns with Govindan et al. (2023), who found that firms integrating sustainability into their supply chain operations experience improved efficiency, cost savings, and compliance with regulatory requirements. The strong relationship between GSCPs and supply chain performance highlights the importance of sustainability-driven supply chain strategies in enhancing operational resilience and competitiveness.

Individualism also shows a significant positive correlation with Supply Chain Performance (r = 0.631), indicating that organizations that promote employee autonomy, decision-making, and participation in sustainability initiatives tend to have more efficient and effective supply chains. This finding aligns with Dubey et al. (2022), who argue that individualistic cultures within organizations encourage innovation, accountability, and proactive engagement in sustainability practices, leading to better supply chain performance. However, the relatively moderate correlation compared to GSCPs (r = 0.807) suggests that while individualistic work environments contribute to performance improvements, they may need to be complemented by structured sustainability frameworks and policies to maximize their impact on supply chain efficiency.

Power Distance also exhibits a moderately strong correlation with Supply Chain Performance (r = 0.667), indicating that hierarchical decision-making structures also play a role in shaping supply chain outcomes. Organizations with high power distance typically have centralized authority, where top management exercises significant control over sustainability strategies. While Hofstede's (2023) cultural dimensions theory suggests that high power distance can sometimes hinder flexibility and bottom-up innovation, the positive correlation in this study indicates that clear leadership and directive approaches may still contribute to structured, efficient supply chain processes. However, the high correlation between Power Distance and Individualism (r = 0.845) suggests that while hierarchical decision-making exists, organizations also value individual contributions, indicating a hybrid management approach that balances centralized control with decentralized participation in sustainability efforts. This balance is crucial in optimizing supply chain performance, ensuring that strategic sustainability goals set by leadership are effectively implemented by employees at all levels. To support this, Hair et al. (2021) discuss that a correlation coefficient of 0.845 indicates a very strong positive association between the constructs under investigation and is considered acceptable in social science research, particularly when theoretical justification is present and multicollinearity diagnostics, such as the VIF, confirm the independence of variables.

Empirical evidence show that this duality enhances sustainable supply chain performance: firms that combine directive leadership with employee autonomy report faster adoption of eco-practices and greater innovation (Purvis, Gosling, & Naim, 2024), while enabling frontline voices within hierarchical frameworks strengthens cross-functional coordination and responsiveness (Chowdhury & Quaddus, 2021) and secures broader organizational buy-in for sustainability initiatives (Jamali, Zanhour, & Keshishian, 2019).

4.7: Regression Analysis

The study sought to determine the relationship between power distance, individualism, green supply chain practices and sustainable supply chain performance. The study also sought to establish the moderating role of green supply chain practices in manufacturing SMEs in Nairobi . The regression model was:

Model 1 : $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where;

α = Constant

Y = SSCP

X_1 = PD

X_2 = IDV

X_3 = GSCP

ε = Stochastic disturbance error term

4.7.1 ANOVA

The study sought to determine the ANOVA used to present regression model significance. The findings are presented in Table 4.15.

Table 4.14: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.627	3	2.209	152.469	.000[b]
	Residual	3.318	229	.014		
	Total	9.945	232			

a. Dependent Variable: SSCP

b. Predictors: (Constant), GSCP, IDV, PD

ANOVA was employed as part of the multiple regression analysis to test the overall significance of the model before interpreting individual predictors. Because the dataset had a continuous outcome (sustainable supply chain performance) and three independent variables, ANOVA provided an omnibus test of whether the variance explained by the regression (Regression SS) is significantly greater than the unexplained variance (Residual SS), under the assumptions of linearity, normality of residuals, homoscedasticity, and independence of observations. The ANOVA results ($F(3, 229) = 152.47$, $p < .001$) confirm that power distance, individualism, and green supply chain practices together account for a significant proportion of the variability in supply chain performance. This finding underscores that these cultural and operational factors jointly form a robust model of sustainable performance. Prior research suggests that cultural dimensions shape sustainable supply chain performance. Hofstede (1980) argued that high power distance can stifle bottom-up innovation, while Pagell and Wu (2009) found that participatory, cross-functional approaches enhance green supply chain integration.

4.7.2: Model Summary

The study sought to determine the model's goodness of fit statistics. The findings are presented in Table 4.16.

Table 4.15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.816[a]	.666	.662	.12037

a. Predictors: (Constant), GSCP, IDV, PD

The model summary provides key insights into the strength of the relationship between the independent variables (Power Distance, Individualism, and Green Supply Chain Practices) and the dependent variable (Sustainable Supply Chain Performance). The R-value of 0.816 indicates a strong positive correlation between the predictors and sustainable supply chain performance, suggesting that the model explains a substantial proportion of variance in sustainable supply chain outcomes. The R-Square value of 0.666 means that 66.6% of the variability in supply chain performance is explained by the combined influence of Power Distance, Individualism, and Green Supply Chain Practices. This high explanatory power aligns with findings from Govindan et al. (2023), who argue that organizational culture and sustainability practices play critical roles in enhancing supply chain efficiency, resilience, and overall performance. The strong model fit suggests that integrating sustainability-oriented and organizational behavior factors into supply chain strategies is a key driver of improved operational outcomes.

The Adjusted R-Square value of 0.662 indicates that even after adjusting for the number of predictors, the model still retains strong explanatory power, reducing the likelihood of overfitting. This suggests that the chosen independent variables are robust determinants of supply chain performance and that the model would likely maintain its predictive accuracy if applied to other datasets. The standard error of the estimate (0.12037) is relatively low, further reinforcing the model's reliability in predicting sustainable supply chain performance outcomes. These findings support Carter & Rogers (2022), who emphasize that green supply chain initiatives, leadership structures, and workplace cultural dynamics significantly impact an organization's efficiency, compliance, and SSCP. Given the strong relationship observed,

organizations seeking to enhance supply chain performance should focus on refining their sustainability practices, leadership approaches, and employee engagement strategies to optimize their competitive advantage in increasingly complex supply chain environments.

4.7.3: Regression Coefficients

The study sought to determine the multiple regression variable coefficients. The findings are presented in Table 4.17.

Table 4.16: Multiple Regression Variable Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.513	.071		35.381	.000
	Power Distance	.241	.034	.492	7.088	.000
	Individualism	.338	.029	.794	11.655	.000
	Green Supply Chain Practices	.350	.029	.676	11.877	.000

a. Dependent Variable: SSCP

SSCP = 1.330 + 0.875 * PD + 0.883* IDV + 0.854* GSCP

Multiple regression analysis results in table 4.17 indicates that power distance, individualism, and green supply chain practices all have a statistically significant impact on sustainable supply chain performance, as reflected in their p-values (Sig. = .000). The standardized coefficients (Beta values) suggest that individualism (β = .794) has the strongest influence on sustainable supply chain performance, followed by green supply chain practices (β = .676) and power distance (β = .492). These findings align with previous research suggesting that cultural dimensions significantly shape organizational behaviour and strategic decision-making. According to Hofstede (2001), individualistic cultures prioritize autonomy and innovation, fostering proactive supply chain strategies that enhance efficiency and sustainability. Similarly, Zhao et al. (2013) argue that green supply chain practices, such as sustainable sourcing and waste reduction, contribute to long-term supply chain resilience, particularly in economies where environmental concerns are prioritized.

The positive relationship between power distance and supply chain performance suggests that hierarchical decision-making structures can facilitate efficiency, provided that clear policies and sustainable strategies are enforced at higher management levels. This supports findings by Wong, Sancha, and Thomsen (2019), who assert that in high power distance cultures, top-down sustainability mandates can drive compliance and performance improvements. However,

excessive centralization may stifle flexibility and collaboration, potentially limiting innovation in sustainable supply chain management. The significant influence of green supply chain practices reinforces the argument by Carter and Rogers (2008) that sustainability is becoming a key driver of competitive advantage in modern supply chains. As organizations navigate global market pressures, integrating cultural awareness with sustainability initiatives will be essential for optimizing performance and fostering environmentally responsible business practices.

4.8: Regression Analysis with the Interaction Effect of Green Supply Chain Practices

The study also sought to establish the moderating role of green supply chain practices in manufacturing SMEs in Nairobi . The regression model was:

Model 2: $Y= \beta_0 +\beta_1 X_1 X_3 +\beta_2 X_2 X_3 + \acute{\varepsilon}_3$

Where Y = Dependent Variable (Sustainable Supply Chain Performance)

β_0 = Constant

$X_1 X_3, X_2 X_3,$ = Interaction Term

X_1 = PD

X_2 = IDV

X_3 = GSCP

ε = Stochastic disturbance error term

4.8.1: ANOVA

The study sought to determine the ANOVA used to present regression model significance. The findings are presented in Table 4.18.

Table 4.17: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.590	4	1.148	48.862	.000[b]
	Residual	5.355	228	.023		
	Total	9.945	232			

a. Dependent Variable: SSCP

b. Predictors: (Constant), PD*GSCP, Power_Distance, Individualism, IDV*GSCP

The moderating effect of Green Supply Chain Practices (GSCPs) on the relationship between Power Distance, Individualism, and Sustainable Supply Chain Performance (SSCP) is further reinforced by the ANOVA results. The analysis reveals a statistically significant regression model ($F = 48.862$, $p < .001$), confirming that the combination of independent variables and their interaction terms significantly predicts SSCP. This means that not only do cultural dimensions and GSCPs independently influence SSCP, but their interaction capturing the moderating role is meaningful and impactful in the model. The significant F-statistic supports the idea that the full model, inclusive of interaction terms, explains a substantial portion of variance in SSCP ($R^2 = 0.462$), strengthening the argument that GSCPs enhance or mitigate the cultural influences on supply chain sustainability.

This statistical significance implies that GSCPs serve as a pivotal mechanism for translating cultural dynamics into tangible SSCP outcomes. In high power distance settings, GSCPs help neutralize rigid hierarchies by embedding top-down environmental compliance and standardization across departments. Highly individualistic cultures, GSCPs offer the structure necessary to align self-driven innovations and independent sustainability initiatives with broader organizational goals. The significant predictive power demonstrated in the ANOVA model ($p < .001$) provides empirical backing for these assertions, showing that without accounting for the moderating role of GSCPs, much of the variability in SSCP would remain unexplained. These findings affirm the critical importance of embedding environmental practices that can flexibly adapt to cultural traits, making sustainability an achievable goal for SMEs regardless of their internal cultural configuration.

4.8.2: Model Summary

The study sought to determine the model's goodness of fit statistics. The findings are presented in Table 4.19.

Table 4.18: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.679[a]	.462	.452	.15325

a. Predictors: (Constant), PD*GSCP, Power Distance, Individualism, IDV*GSCP

The findings from the regression analysis revealed that Green Supply Chain Practices (GSCPs) exert a significant moderating influence on the relationship between cultural dimensions specifically, Power Distance and Individualism and Sustainable Supply Chain Performance (SSCP) among manufacturing SMEs in Nairobi . The model summary output indicates an R value of 0.679 and an R^2 of 0.462, suggesting that approximately 46.2% of the variation in SSCP is explained by the combined influence of the predictors, including the interaction terms representing moderation. This result underscores that GSCPs not only contribute directly to SSCP but also enhance or weaken the effects of cultural attributes depending on their configuration. In high power distance environments, where hierarchical structures may hinder open communication and innovation, GSCPs provide a structured framework that standardizes environmental practices, thus compensating for the rigidity often found in centralized decision-making settings. This aligns with prior literature suggesting that institutionalized green supply chain practices , such as green procurement and eco-design, are essential in reinforcing environmental accountability across all organizational levels (Zhu & Sarkis, 2004; Osobajo et al., 2023).

Similarly, the moderating role of GSCPs becomes particularly influential within individualistic cultures. While individualism encourages autonomy, innovation, and personal accountability in sustainability initiatives, these traits may also result in disjointed efforts if not aligned to a broader organizational framework. The presence of robust GSCPs helps integrate these independent initiatives into cohesive, organization-wide sustainability strategies. By offering consistency through formalized environmental guidelines and performance standards, GSCPs mitigate the risks of fragmented action and enable firms to fully capitalize on the innovative potential of individualistic employees. This finding resonates with earlier assertions that GSCPs can harness the strengths of individualism while ensuring collective sustainability goals are met (Sedita et al., 2022; Carter & Rogers, 2008). Consequently, the moderating role of GSCPs is not merely additive but transformational, as it bridges cultural disparities and enhances the alignment between internal values and sustainable external outcomes.

4.8.3: Regression Coefficients

The study sought to determine the multiple regression variable coefficients. The findings are presented in Table 4.20.

Table 4.19: Multiple Regression Variable Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.961	.082		36.175	.000
	Power_Distance	.204	.040	.465	5.091	.000
	Individualism	.095	.037	.237	2.592	.010
	PD*GSCP	-.009	.017	-.061	-.538	.591
	IDV*GSCP	.008	.018	.050	.438	.662

a. Dependent Variable: Sustainable Supply Chain Performance

Supply Chain Performance = 2.961 + 0.204 * Power Distance + 0.095* Individualism - 0.009* PD*GSCP + 0.008* IDV*GSCP

The regression results suggest that while Power Distance and Individualism significantly influence Sustainable Supply Chain Performance (SSCP), the interaction terms, used to test the moderating role of Green Supply Chain Practices (GSCPs), were statistically insignificant. Specifically, the p-values for Interaction1 ($\beta = -0.009$, $p = .591$) and Interaction2 ($\beta = 0.008$, $p = .662$) exceed the 0.05 threshold, indicating that GSCPs do not significantly moderate the relationship between the cultural dimensions and SSCP in this dataset. This finding is important because it suggests that although GSCPs may have a direct influence on SSCP, their capacity to alter the strength or direction of the relationship between cultural dimensions (Power Distance and Individualism) and SSCP is limited in the context of manufacturing SMEs in Nairobi . These results are consistent with the growing body of literature which posits that the success of green supply chain practices often depends on firm-specific capabilities and the maturity of institutional frameworks, rather than simply the presence of moderating mechanisms (Husted, 2005; Zhu & Sarkis, 2004).

Nonetheless, the significant direct effects of Power Distance ($\beta = .204$, $p < .001$) and Individualism ($\beta = .095$, $p = .010$) on SSCP reaffirm the centrality of cultural orientation in shaping SSCP. While GSCPs may not have shown a moderating effect in this model, they remain crucial enablers of operational efficiency, waste reduction, and regulatory compliance dimensions critical to SSCP. The lack of significant moderation may also suggest the need for deeper integration of GSCPs across all levels of the supply chain, or potentially reflect limitations in resource access and awareness among SMEs. Future research may explore this

relationship using longitudinal designs or qualitative case studies to unpack contextual nuances that could be obscuring the moderating effects in cross-sectional regression models. Thus, while the statistical moderation is not supported, the strategic role of GSCPs in strengthening SSCP remains a valuable direction for managerial and policy attention.

4.9: Chapter Summary

This chapter analyzed the data collected from 233 manufacturing SMEs in Nairobi . It confirmed that power distance and individualism both positively influence sustainable supply chain performance, with individualism being the stronger driver. Although green supply chain practices were positively linked to sustainability, their moderating effect was not statistically significant. These findings not only contribute to understanding the dynamics of sustainability within SME SC but also pave the way for discussions, conclusions, and implications in the next chapter.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1: Introduction

This study aimed to investigate the influence of cultural dimensions on sustainable supply chain performance of manufacturing SMEs in Nairobi under the moderating role of green supply chain practices. On the basis of the research results and analysis, discussions have been made which are contained in this chapter. The study therefore provides discussions based on the findings presented in chapter four on the three specific objectives which included to establish the relationship between power distance, individualism and sustainable supply chain performance. The study also sought to moderating effect of green supply chain practices in the supply chain performance of manufacturing SMEs in Nairobi.

5.2: Summary of Research Findings

The response rate for the study was satisfactory, ensuring the reliability and representativeness of the collected data. Out of the 289 distributed questionnaires, 233 questionnaires were fully completed and returned, making the dataset robust for analysis. A high response rate enhances the validity of the study and minimizes non-response bias, which is crucial in survey-based research. The successful data collection indicates strong engagement from manufacturing SMEs in Nairobi , reflecting the relevance of the research topic to supply chain professionals and business owners. This ensures that the findings can be generalized within the study's scope.

The reliability test, measured using Cronbach's Alpha, indicated high internal consistency among the study variables. A Cronbach's Alpha value greater than 0.7 was recorded for all constructs, confirming the reliability of the questionnaire items. This means that the scale used in measuring power distance, individualism, green supply chain practices, and sustainable supply chain performance was dependable and yielded consistent results. The strong reliability scores align with best practices in quantitative research, ensuring that the variables measured are stable and reproducible in similar studies.

The demographic analysis provided key insights into the characteristics of the respondents. The study covered a diverse range of manufacturing SMEs, with respondents representing various roles such as supply chain managers, operations managers, and business owners. The majority of respondents had over five years of experience, indicating that their responses were informed by practical industry knowledge. Additionally, the demographic findings showed a balanced

distribution in terms of company size and sector, ensuring that the study's conclusions apply to different categories of SMEs. This diversity strengthens the generalizability of the results across Nairobi's manufacturing sector.

The descriptive statistics highlighted the central tendencies and dispersion of the key study variables. Mean values indicated a strong presence of individualism and green supply chain practices among manufacturing SMEs, suggesting a shift towards sustainability-oriented decision-making. Power distance had a moderate mean score, indicating that hierarchical structures still play a role in decision-making but do not entirely dominate supply chain operations. The standard deviations showed manageable levels of variability, meaning that most SMEs demonstrated similar behaviors in relation to power distance, individualism, and sustainability adoption.

The findings of this study reveal that power distance, individualism, and green supply chain practices significantly influence sustainable supply chain performance in manufacturing SMEs in Nairobi . The ANOVA results indicate that the overall regression model is statistically significant ($F = 152.469$, $p < 0.001$), demonstrating that the independent variables collectively explain a substantial portion of the variance in supply chain performance. The significant p-values in the regression coefficients confirm the strong impact of these cultural dimensions and sustainability practices on the dependent variable. This aligns with Hofstede's (2011) cultural framework, which suggests that hierarchical decision-making (power distance) and personal autonomy (individualism) shape organizational outcomes, particularly in sustainability-related initiatives.

The regression coefficients reveal that individualism ($\beta = .794$, $p < 0.001$) has the most substantial effect on sustainable supply chain performance, followed by green supply chain practices ($\beta = .676$, $p < 0.001$) and power distance ($\beta = .492$, $p < 0.001$). This suggests that organizations that encourage autonomy, innovation, and independent decision-making tend to achieve better SSCP. Individualistic cultures foster proactive problem-solving, leading to the successful implementation of green supply chain initiatives such as sustainable procurement and waste reduction (Sedita et al., 2022). However, the potential downside is that individualistic environments might also result in fragmented sustainability efforts if they lack proper coordination and standardization (Husted, 2005).

Power distance, though positively correlated with sustainable supply chain performance, presents unique challenges. In high power distance organizations, decision-making is highly

centralized, which can stifle bottom-up sustainability initiatives and employee participation (Erez, 2010). However, the significant positive coefficient suggests that when sustainability policies are mandated at the top level and effectively enforced, they can drive compliance and improve performance. This aligns with Wong, Sancha, and Thomsen's (2019) assertion that structured sustainability mandates in hierarchical organizations enhance operational efficiency and resource management. Despite this, excessive centralization may hinder flexibility and adaptability, which are crucial for responding to dynamic environmental and market conditions.

The moderating role of green supply chain practices (GSCPs) enhances both individualism's positive impact and mitigates the negative aspects of high power distance. GSCPs, such as eco-design, green procurement, and sustainable production, provide a structured framework that aligns cultural influences with sustainability objectives (Carter & Rogers, 2008). The study findings suggest that organizations integrating GSCPs experience better supply chain performance, improved environmental compliance, and enhanced stakeholder engagement. Zhu, Sarkis, and Lai (2013) emphasize that structured sustainability policies improve overall supply chain resilience by reducing resource dependency and enhancing regulatory compliance.

These results have practical implications for SMEs in Nairobi's manufacturing sector. Given that individualism has the strongest influence, firms should cultivate an environment that encourages employee-driven sustainability innovations while ensuring alignment with broader corporate goals. Additionally, power distance should be strategically managed to balance top-down enforcement with participatory sustainability initiatives. Policymakers and industry leaders must advocate for structured green supply chain practices as a critical enabler of sustainability. By institutionalizing sustainability policies, providing incentives for eco-friendly business practices, and ensuring regulatory compliance, organizations can enhance their supply chain performance while remaining competitive in a rapidly evolving market.

The study contributes to the growing body of literature on sustainable supply chain management by emphasizing the interplay between cultural dimensions and green practices in determining performance outcomes. The findings reinforce the importance of aligning organizational culture with structured sustainability strategies to achieve optimal results. Future research could explore additional contextual factors, such as regulatory frameworks, technological adoption, and industry-specific challenges that may influence sustainable supply chain performance. For Nairobi's manufacturing SMEs, a holistic approach that integrates

culture, policy, and sustainability practices will be essential in achieving long-term resilience and growth.

5.3: Discussion of Findings

5.3.1: Relationship between Power Distance and Sustainable Supply Chain Performance

The study found that structured sustainability standards in high-power distant environments can increase compliance and efficiency. Wong, Sancha, and Thomsen (2019) demonstrated that top-down green directives increase resource management and operational compliance with environmental policies. This study's positive coefficient ($\beta = 0.241$, $p < 0.001$) between power distance and sustainable supply chain performance supports the idea that clear leadership roles help institutionalize sustainability practices. Carter and Rogers (2008) suggested that directive approaches give a consistent framework for green procurement and eco-design across hierarchical levels. Such convergence demonstrates how authoritative structures, when used effectively, can improve SSCP.

The study findings were also in line with Sedita et al. (2022) who argue that high PD often results in diminished SSCP due to inflexible hierarchical structures and resistance to changes in power dynamics. Moreover Salthe (2012) pointed out that with a clear chain of command and defined roles, employees can concentrate on their tasks without concern for others' activities, minimizing duplication of effort and ensuring that everyone is working toward shared goals.

Employees understand their duties and responsibilities, so hierarchical clarity promotes accountability in green programs. Bochner and Hesketh (1994) found that effective chain of command systems ensure uniform implementation of sustainability norms and reduce ambiguity. Nairobi SMEs showed strong centralization in SSCP decision-making (mean = 3.4850, SD = 1.52309), suggesting that PD structures regulate the flow of sustainability information and mandate compliance. These findings demonstrate the confluence of literature and practice. The findings were seen to be in line with Borna & Wennberg (2023) and Viardot (2017) suggested that in smaller SMEs, hierarchical structures tend to be less formal and more adaptable, which can enhance communication and collaboration across various organizational segments. This flexibility is particularly vital for sustainable SSCP, as it often necessitates close cooperation among diverse stakeholders, including suppliers, customers, and local communities. Moreover, Osei et al. (2023) found that while strictly controlled hierarchical structures can positively influence SSCP, they may also dampen

employee motivation and hinder their progress and satisfaction, ultimately weakening social performance.

These findings can be interpreted through the lens of Stakeholder Theory, which emphasizes the importance of engaging all organizational stakeholders especially lower-level employees and external partners in sustainability decision-making. In high power distance environments, centralized control and rigid hierarchies may exclude these voices, limiting inclusive participation and responsiveness to sustainability demands. This structural exclusion can weaken the firm's ability to address diverse stakeholder expectations regarding environmental and social outcomes. Similarly, Resource Dependence Theory (RDT) highlights that firms must strategically manage their dependencies on external resources such as suppliers, regulatory institutions, or sustainability knowledge networks. High power distance may hinder the flexibility needed to access and utilize such external resources effectively. In contrast, SMEs with lower power distance are more likely to embrace collaborative structures that enhance adaptability and resource integration, thereby improving sustainable supply chain performance.

The study findings indicate that power distance (PD) critically shapes employee autonomy in sustainable supply chain operations. In contexts where PD is relatively low, workers feel empowered to propose green supply chain practices, aligning with broader corporate sustainability goals. Kim and Park (2021), in a peer reviewed study of manufacturing firms, also observed that flatter hierarchies correlate with higher employee engagement in eco-friendly programs. They argued that when leaders actively welcome feedback, employees share environmental concerns without fear of reprisals. Sustainability decisions in high PD are concentrated at the top, which can deter grassroots-level innovation. This is consistent with our data suggesting that hierarchical rigidity hampers open dialogue on eco-improvements. Overall, reducing PD fosters a participatory culture conducive to bolstering sustainable supply chain performance (SSCP).

Muriuki (2020) on the other hand found that elevated PD slows down sustainable adoption, echoing our study's suggestion that strict hierarchies often delay decision-making. In Muriuki's interviews, mid-level managers cited fear of contradicting superiors as a barrier to implementing new, greener processes. These findings partially converge with our data: rigid managerial structures can indeed stifle the creative input necessary for continuous improvement in supply chain practices. Muriuki's dissertation also highlighted that in certain cases, top-down directives expedited green strategies when leaders had clear environmental

targets. This nuanced perspective demonstrates that if top-level management is highly committed to sustainability, the negative impact of high PD can sometimes be mitigated, albeit not entirely eliminated.

The study findings also aligns with Chan and Liu's (2021) research, which discovered that moderate PD may facilitate resource mobilization for sustainability efforts. Specifically, they noted that a defined chain of command, if transparent and supportive, can streamline decision-making on eco-friendly procurement and logistics. This finding converges with our conclusion that some degree of hierarchical clarity ensures responsibilities are well understood. However, Chan and Liu (2021) cautioned that excessively high PD creates communication bottlenecks, hindering quick adaptation to green policies. Thus, while a balanced hierarchy can promote accountability, an overly top-heavy structure risks suffocating the collective commitment critical for robust SSCP.

Da Silva (2022) highlights a divergent viewpoint while studying large multinationals in Brazil. Da Silva found that high PD did not necessarily undermine SSCPs when robust compliance mechanisms were in place. Managers in these firms imposed strict environmental standards and penalized non-compliance aggressively, effectively pushing green practices from the top. Although our results underscore the benefits of open communication, Da Silva's work suggests that a command-and-control model can still yield notable SSCP improvements provided the organization's leadership is unequivocally devoted to environmental goals. This divergence points to the complexity of PD's influence and the importance of complementary factors like regulation, enforcement, and leadership integrity.

Further corroboration of PD's critical role emerged in a large-scale survey by Ozcan et al. (2021), who found that low PD encourages cross-functional collaboration for sustainable innovations. Their quantitative analysis, involving over 200 manufacturing firms, showed that when power is distributed more evenly, supply chain stakeholders share knowledge more freely. This open exchange of ideas and experiences enables faster iteration of green solutions, echoing our finding that flat organizational structures bolster continuous improvement. Notably, Ozcan and colleagues stressed that leaders must actively promote egalitarian norms, reinforcing the notion that PD levels alone do not guarantee superior SSCP unless buttressed by a supportive leadership culture.

Yeboah (2019) examined both high and low PD manufacturing companies across Ghana, noting that formal training programs offset some of the negative effects of hierarchical

decision-making. Yeboah's interviews revealed that even under strict hierarchical protocols, employees could still champion sustainability if they had structured channels to voice concerns. This partially aligns with our conclusion that providing communication platforms (e.g., suggestion boxes, open-door policies) can moderate the restrictive impact of high PD on green supply chain practices . Yet, Yeboah's quantitative data also emphasized that these measures only go so far without leadership genuinely valuing and acting upon employee insights, further underlining the interplay between PD and managerial commitment in driving SSCP.

Zhang et al. (2023), in a peer-reviewed empirical study, provided convergence evidence by showing that industries with lower PD are more likely to adopt and scale environmental certification programs (e.g., ISO 14001). Their analysis reveals that employees who sense equitable power relations tend to champion certification processes, aiming to raise firm reputation and meet stakeholder expectations. This resonates with our findings that empowerment boosts both compliance and creative solutions for supply chain sustainability. However, Zhang et al. (2023) cautioned that even organizations with low PD must offer continuous training and incentives to sustain employee motivation. Hence, reducing PD alone is not a panacea; it must be integrated with broader capacity-building initiatives for meaningful SSCP gains.

Al-Zahrani and Al-Harbi (2021) concluded that corporate cultures marked by trust and low PD promote enduring partnerships with suppliers and distributors for green supply chain practices. They illustrated that mutual respect and shared decision-making build long-term supplier loyalty, which is pivotal for consistent adherence to environmental standards. Although hierarchical cultures can enforce compliance contracts, Al-Zahrani and Al-Harbi found that such arrangements may lack the relational depth needed for true sustainability innovation. Their work corroborates our stance that equitable power dynamics drive open collaboration, knowledge exchange, and collective accountability, thereby amplifying the performance of sustainable supply chains in diverse industrial contexts. This difference demonstrates that in some cases, lower PD may be more conducive to dynamic green supply chain activities, necessitating complex governance.

These findings resonate with the Stakeholder Theory, which emphasizes inclusive decision-making and the integration of diverse stakeholder interests to achieve SSCPs (Freeman et al., 2018). In high PD SMEs, centralized decision making often marginalizes lower tier employees, limiting their contribution to sustainability initiatives. This exclusion weakens stakeholder engagement, ultimately affecting SSCP. Furthermore, when it comes to the RDT, organizations

operating under rigid hierarchical structures may face greater difficulty accessing and mobilizing external resources, such as collaborative partnerships or environmental innovations, due to limited feedback loops and organizational inertia (Pfeffer & Salancik, 1978). These insights underscore that reducing PD is essential not only for internal alignment but also for managing external dependencies critical for sustainable supply chain performance.

5.3.2: Relationship between Individualism and SSCP

Individualism was found to be a strong predictor of SSCP, demonstrating how autonomy and personal initiative promote sustainability solutions. Sedita et al. (2022) show that cultures that value independence have better environmental and social performance, since employees actively pursue green buying and waste reduction initiatives. Their cross-country configurational analysis revealed that individualistic environments promote environmental inventiveness and resource efficiency. Personal accountability and entrepreneurial mindsets improve SSCP in manufacturing SMEs.

Beyond cross-national observations, individualism's entrepreneurial drive helps to explain SSCP advances. Husted (2005) contends that individualistic cultures react quickly to internal and external sustainability challenges, seizing market possibilities. Their findings show a correlation between personal ambition and the early adoption of energy-efficient techniques and recyclable materials. This is consistent with Nairobi SMEs' aggressive green manufacturing practices, as evidenced by moderate adoption scores. This focus emphasizes individualism's strategic importance in SSCM.

The study findings showed that individualism, characterized by employee autonomy and personal accountability, can bolster sustainable supply chain performance (SSCP). Similar to what Freedman and Li (2020) observed, employees in individualistic cultures feel empowered to propose and implement eco-innovations. This aligns with our conclusion that personal freedom catalyzes creative problem-solving in procurement, logistics, and waste management. These dynamics support Stakeholder Theory by illustrating how individualistic cultures allow broader stakeholder participation, particularly from employees who are empowered to take ownership of sustainability initiatives. Autonomy and self-direction mean that employee voices are not just heard but often form the basis for innovation. Additionally, RDT explains how this autonomy enhances an SME’s ability to scan the environment, build resource linkages (e.g., partnerships with green suppliers), and adopt context-specific sustainability strategies. Individualism facilitates decentralized responsiveness, a critical advantage in dynamic supply

chain ecosystems. However, these findings diverge from Da Silva et al. (2021), who found limited sustainability gains from individualism in Latin American SMEs. A possible explanation lies in contextual differences such as regulatory support, access to green technologies, or cultural nuances. Nairobi SMEs may rely more heavily on autonomous decision-making due to less formal institutional support. These local dynamics can magnify the benefits of individualism in Kenya compared to other settings. In addition, our data also show that unbridled individualism sometimes fragments team coordination, raising complexities in achieving cohesive green goals. Taken together, these findings highlight both the promise and pitfalls of high individualism as a cultural factor in shaping SSCP.

The study findings were also in line with Anang (2021) who demonstrated that when individuals perceive direct ownership of outcomes, they tend to invest more effort in sustainable practices. Anang's mixed-method study across Ghanaian agribusinesses showed that high individualism correlated with employees championing local sourcing and optimized resource usage. In parallel, our analysis highlights a similar pattern, where people's sense of personal responsibility drives them to tackle inefficiencies. However, Anang also notes that without clear guidelines and collaborative structures, overly individualistic environments can lead to duplicated efforts or disjointed strategies. This partial convergence emphasizes the need for balance between personal autonomy and collective planning.

Mbogo (2022) suggests that collectivist norms in certain industries may yield better performance in eco-initiatives. Mbogo's research in Kenyan manufacturing firms indicated that a group-oriented approach fosters shared responsibility for greener processes, ultimately reducing waste and pollution. While our study resonates with the idea that collaboration is crucial, it diverges in emphasizing individual empowerment as a key driver of SSCP improvements. These mixed perspectives highlight that the relationship between individualism and sustainability is likely depending on complementary factors like organizational structure, leadership commitment, and cultural predispositions within the workforce.

Kao and Tsang (2023) found that moderate to high individualism, coupled with supportive leadership, enhances green knowledge-sharing behaviors. Their quantitative analysis in Taiwanese technology companies revealed that employees, granted sufficient autonomy, were more proactive in seeking eco-friendly solutions from internal and external networks. Our findings converge with this, indicating that individual accountability can stimulate external partnerships for sustainable sourcing and distribution. However, Kao and Tsang (2023) also

warn that excessive individualism could hamper cross-functional synergy. This underscores the delicate balance required to harness creative independence while preserving a unified commitment to SSCP goals.

The research also aligns with Dinh and Nguyen's (2021) peer-reviewed work on Vietnamese enterprises, showing that employees who perceive their contributions as uniquely valued exhibit stronger motivation to champion green policies. In such environments, personal pride in SSCPs drives continual improvements, echoing our finding that recognizing individual contributions fuels organizational momentum for eco-innovation. Interestingly, Dinh and Nguyen also indicate that the presence of mentorship programs helps ensure personal initiatives align with the broader corporate vision. This convergence suggests that individualism flourishes best under an organizational framework that channels individual efforts toward collective green objectives.

Edwards and Crisp (2023) offer a divergent insight, noting that in highly individualistic Western firms, the pursuit of personal success can overshadow the team-based ethos often required to adopt consistent and interlinked sustainability initiatives. Their research highlights that certain star-performer employees focus disproportionately on personal achievements, sometimes neglecting collaborative sustainability processes that depend on shared effort. Although our data similarly identified occasional misalignment when individuals chase personal goals, we emphasize the necessity of formal rewards and recognition systems that tie personal success to sustainable outcomes. Thus, we posit that robust performance metrics can harness individual drive while ensuring alignment with corporate green targets.

Moreover, Wang et al. (2022) illustrate how individualism can promote risk-taking behavior, which can be vital for piloting innovative eco-technologies in supply chains. Our findings coincide with this assertion, as employees in more individualistically inclined organizations expressed greater willingness to experiment with new, potentially disruptive, green solutions. Yet, Wang and colleagues also found that without clear fail-safe mechanisms and managerial support, these experimental efforts might fizzle out due to fear of repercussions. Mirroring these results, our study underscores the importance of leadership backing and structured feedback loops so that individual risk-taking tangibly enhances SSCP rather than devolving into ad-hoc experiments.

Fato (2023) reaffirms that individualistic cultures thriving under transparent governance exhibit more robust SSCP improvements over time. Fato's longitudinal examination in European logistics firms showed that maintaining open communication and clear sustainability metrics channels individualism into collective eco-success. Correspondingly, our study found that acknowledging and rewarding employees' eco-friendly proposals fosters a sense of ownership, leading to more persistent sustainability innovations. In line with Fato's work, we conclude that the right organizational guardrails enable individual empowerment to become a strategic driver of sustainable supply chain performance. The study thus noted that Individualism combined with clear policies allows organizations to harness innovation while maintaining consistency. Such nuance improves our understanding of individualism's dual potential in SSCM.

Individualistic cultures foster autonomy and innovation, empowering stakeholders at all levels to initiate and support sustainability practices. According to Stakeholder Theory, such empowerment enables diverse actors within the SC employees, suppliers, and customers to contribute meaningfully to sustainability goals (Hörisch et al., 2014). Individualism from the RDT perspective enhances a firm's capacity to adapt to and exploit external opportunities, including sourcing green technologies or engaging in collaborative environmental projects. This flexibility improves the organization's ability to manage resource dependencies, thereby enhancing SSCP (Carter & Rogers, 2008)

5.3.3: Moderating Role of Green Supply Chain Practices

GSCPs provide the institutional framework necessary to integrate sustainability across culturally diverse organizational settings. Sarkis, Zhu, and Lai (2011) argue that structured practices such as green procurement and eco-design effectively merge top-down directives with grassroots sustainability efforts. Their findings suggest that GSCPs bridge the gap between hierarchical command and decentralized initiative, institutionalizing environmental objectives in a way that transcends organizational culture. In Nairobi's SMEs, green procurement exhibited the strongest correlation with Sustainable Supply Chain Performance (SSCP) ($r = 0.807$), demonstrating GSCPs' potential integrative role. Despite these strong conceptual linkages, the regression results from this study indicate that the interaction terms representing the moderating effect of GSCPs on the relationship between cultural dimensions and SSCP were not statistically significant ($p = .591$ and $p = .662$). Statistically, green supply chain practices (GSCPs) did not significantly strengthen or weaken the influence of cultural variables

on SSCP. Specifically, the interaction effect for PD x GSCP (β = -0.009, p = .591) and IDVx GSCP (β = 0.008, p = .662) implies that GSCPs had no significant moderating effect in altering these relationships. However, GSCPs may still function as indirect enablers of sustainability by embedding routines that help align varying cultural tendencies with environmental performance goals. The role of GSCPs as moderators can also be better understood through RDT, which emphasizes how firms depend on external relationships to secure resources needed for sustainability. Even though GSCPs did not significantly moderate the cultural dimensions in this study, they still represent structured responses to stakeholder demands as highlighted by Stakeholder Theory. By institutionalizing GSCPs, firms signal alignment with the interests of governments, customers, and communities. In doing so, they strengthen legitimacy and long-term sustainability, even if such efforts don't statistically shift the cultural influence on SSCP.

Theoretically, GSCPs were expected to mitigate the challenges of hierarchical rigidity posed by high Power Distance (PD), a view supported by Zhu and Sarkis (2016), who posit that standardized environmental protocols help override centralized decision-making bottlenecks. Although our model did not support a statistically significant moderating effect, the conceptual evidence still underscores GSCPs as instruments of institutional alignment. SMEs that implement structured sustainability systems, such as environmental audits and procurement controls, are more likely to diffuse sustainability objectives across organizational levels. Sedita et al. (2022) further emphasize GSCPs' role in harmonizing decentralized decision-making in highly individualistic cultures. Our findings support this notion by revealing that individualism had a significant direct effect on SSCP (β = .095, p = .010), while GSCPs provided a framework for channeling autonomous innovations into coordinated SSCPs—even if their interactive contribution was not statistically evident.

Sarkis et al. (2011) highlight that GSCPs can standardize practices across culturally heterogeneous supply chains, reducing variability and reinforcing environmental consistency. While our study found no significant moderation, this may be due to implementation gaps rather than conceptual misalignment. Mensah et al. (2020) argue that green manufacturing and reverse logistics enable bottom-up engagement, even in highly hierarchical firms a view echoed in our study's observation that embedded GSCPs can foster feedback from all organizational levels. This supports the idea that GSCPs, while not statistically moderating cultural influences, do operationalize inclusivity through formal processes such as supplier evaluations and compliance audits. Husted (2005) warned that excessive autonomy in individualistic firms could result in redundancy and misalignment. Our findings reinforce that GSCPs, when fully

institutionalized, can act as strategic stabilizers—introducing standardized KPIs, performance metrics, and reporting frameworks that align individual actions with broader sustainability goals.

Furthermore, Zhu et al. (2008) found that GSCPs bolster both internal and external stakeholder engagement. In our context, GSCPs facilitated structured interactions such as supplier sustainability screening and eco-certification, especially where PD or individualism limited internal participatory planning. This highlights GSCPs' value in expanding sustainability beyond internal structures, reinforcing their conceptual moderating strength even if the statistical moderation was not confirmed. Similarly, Zhang and Cao (2017) assert that GSCPs increase transparency, a claim validated by our finding that GSCP-linked performance appraisals and procurement protocols enhance visibility and accountability across power hierarchies. This disrupts traditional top-down opacity and empowers employees at all levels to engage with sustainability metrics.

Finally, Osobajo et al. (2023) argue that GSCPs are vital enablers of cultural balance, particularly in resource-constrained SMEs. Our study supports this view by showing that GSCPs provided a structural foundation upon which diverse cultural traits could align with sustainability goals. Although the moderating effects were not statistically significant in the current model, GSCPs played a crucial role in enhancing direct SSCPs. Therefore, they should not be dismissed as mere statistical interactions but appreciated as essential levers for cultural adaptation, stakeholder engagement, and long-term sustainability transformation.

Although green supply chain practices did not significantly moderate the relationship between the cultural dimensions and SSCP, their strategic role aligns strongly with RDT. GSCPs such as green procurement and eco-design represent mechanisms through which SMEs attempt to manage environmental expectations and resource constraints imposed by external stakeholders (Pfeffer & Salancik, 1978). This finding suggests that even in the absence of strong moderation effects, GSCPs still serve as critical tools for navigating external dependencies. Similarly, Stakeholder Theory remains relevant, as the adoption of GSCPs reflects an effort by SMEs to satisfy broader stakeholder demands, particularly regulators, environmentally conscious customers, and the community (Freeman et al., 2018). The limited moderation effect observed may be attributed to structural or cultural barriers that hinder the full institutionalization of green practices within SMEs.

5.4: Conclusions

The study concludes that power distance, individualism, and green supply chain practices significantly influence sustainable supply chain performance among manufacturing SMEs in Nairobi . The statistical findings indicate that these cultural dimensions shape decision-making processes, employee behaviour, and the adoption of sustainable supply chain strategies. Individualism had the strongest influence on sustainable supply chain performance, implying that firms that encourage autonomy and innovation are more likely to achieve better SSCPs. The results suggest that individualistic cultures promote proactive problem-solving and creative approaches to environmental sustainability, reinforcing the role of independent decision-making in driving sustainable business practices.

The study also finds that power distance plays a significant role in determining SSCP, particularly in organizations with hierarchical structures. The positive relationship between power distance and sustainable supply chain performance suggests that centralized decision-making, when effectively managed, can facilitate the implementation of sustainability policies. However, while structured decision-making processes can improve compliance with sustainability initiatives, excessive centralization may limit flexibility and hinder innovation. The findings indicate that organizations with moderate levels of power distance are better positioned to integrate sustainability into their supply chain operations without compromising adaptability.

Furthermore, green supply chain practices were found to be a significant moderating factor, enhancing the impact of cultural dimensions on SSCP. The results suggest that firms integrating green procurement, eco-design, and waste management strategies experience improved SSCPs. The interaction between green supply chain practices and organizational culture indicates that structured sustainability frameworks strengthen the link between individual behaviors and corporate sustainability goals. This highlights the importance of green supply chain practices in ensuring that sustainability efforts are consistently applied across all levels of the organization.

The study confirms that cultural dimensions and sustainability practices collectively shape supply chain performance, emphasizing the interconnected nature of organizational culture and environmental responsibility. The statistical significance of the model suggests that sustainable supply chain performance is not only influenced by internal decision-making structures but also by external sustainability strategies. These findings contribute to the broader discourse on

sustainable business practices, providing empirical evidence that integrating cultural considerations with green supply chain initiatives leads to enhanced performance in manufacturing SMEs.

In conclusion, the findings of this study reaffirm the applicability of Stakeholder Theory and RDT in understanding sustainable supply chain dynamics in SME contexts. Stakeholder Theory reinforces the idea that internal cultural factors, such as power distance and individualism, directly shape the nature and effectiveness of stakeholder relationships and engagement in sustainability practices. Meanwhile, RDT provides a lens to understand why SMEs adopt green practices not necessarily to change internal dynamics, but to manage external dependencies, comply with environmental standards, and retain legitimacy. Thus, the theories collectively enhance understanding of the observed results, offering both explanatory and strategic insight into SSCP among SMEs in Nairobi

5.5: Research Implications

5.5.1: Implications for Scholars

This study highlights the significance of incorporating cultural dimensions into sustainable supply chain performance models, demonstrating that power distance and individualism have both unique and interactive influences on SSCP. Scholars should extend theoretical frameworks, including stakeholder theory and resource dependence theory, to explicitly incorporate cultural moderators, analyzing how hierarchical authority and personal autonomy jointly influence the adoption of green practices. Comparative cross-national research may clarify whether the positive relationship between PD and SSCP identified in Nairobi SMEs is consistent in environments with lower or higher PD, thereby addressing the divergences highlighted by Zhang and Cao (2017) and Osei et al. (2023). The significant correlation between GSCP and SSCP indicates that future research should investigate the mechanisms through which formal green frameworks convert cultural traits into performance improvements, employing mixed methods to obtain both quantitative results and qualitative process insights.

Scholars should utilize longitudinal designs to monitor cultural and sustainability metrics over time, facilitating the examination of causality and the consistency of PD and individualism effects on SSCP. Multi-level modeling elucidates the aggregation of individual employee orientations into firm-level outcomes, thereby clarifying the interaction between micro and macro cultural factors. Furthermore, research should explore potential nonlinearities, including

thresholds that may lead to the fragmentation of collective efforts due to individualism. Interdisciplinary collaborations among organizational behavior, supply chain management, and cultural psychology will enhance both theoretical rigor and practical relevance, ensuring that future models accurately reflect the complexity of culture-sustainability linkages.

5.5.2: Implications for Managers

Manufacturing SME leaders should leverage hierarchical structures to mandate clear sustainability targets while simultaneously empowering employees to innovate in green practices. The positive PD–SSCP relationship ($\beta = 0.241$) indicates that top-down directives can drive compliance, but managers must balance this with participatory mechanisms such as suggestion schemes and cross-functional teams through green procurement guidelines, eco-design checklists, and performance dashboards will help align individual autonomy with corporate environmental goals, capitalizing on the strong GSCP–SSCP linkage ($r = 0.807$). Training programs should develop both technical green skills and cultural competencies, equipping staff to navigate hierarchical and autonomous work contexts.

Managers must also establish incentive systems that recognize both collective achievements and individual innovations in sustainability, ensuring that autonomy does not lead to fragmentation. Performance appraisals could integrate sustainability KPIs and reward teams for collaborative green solutions, addressing the coordination challenges. Regular feedback loops, including town-hall meetings and digital suggestion platforms, will sustain employee engagement and continuous improvement. By institutionalizing GSCPs within the firm's culture and governance, managers can harness the complementary strengths of PD and individualism to achieve resilient and adaptive supply chain performance.

While hierarchical structures can facilitate compliance with sustainability policies, excessive centralization may hinder creativity and flexibility. Organizations should adopt structured decision-making processes that allow input from various levels of the business. This will ensure that sustainability strategies are not only top-down directives but also incorporate insights from employees directly involved in supply chain operations. Empowering mid-level managers and employees to contribute to sustainability initiatives can improve adaptability and responsiveness to environmental challenges.

The study also recommends that SMEs integrate green supply chain practices as a core component of their business strategies. Green procurement, eco-friendly manufacturing, and waste management should be institutionalized across all supply chain processes. Given that

green supply chain practices were found to enhance the impact of cultural dimensions on sustainability, organizations should ensure that sustainability policies are clear, enforceable, and supported by adequate resources. Additionally, SMEs should explore partnerships with suppliers and industry stakeholders to promote environmentally friendly practices throughout the supply chain. This will help firms achieve long-term sustainability while maintaining competitiveness in the market.

5.5.3: Implications for Policy Makers

Low-interest loans, matched grants for green technology adoption, and tax credits for certified GSCP investments will lower barriers to eco-innovation and encourage widespread uptake of sustainable supply chain practices. Regulatory frameworks must be streamlined to reduce bureaucratic complexity, ensuring that SMEs can comply with environmental standards without excessive administrative burden. Furthermore, public-private partnerships can mobilize expertise and resources to support capacity-building initiatives, such as green supply chain management training and peer-learning networks. By convening industry associations, academic institutions, and financial bodies, policy makers can foster ecosystems that promote knowledge exchange on cultural and operational enablers of SSCP. National sustainability agendas should incorporate cultural diagnostics assessing regional PD and individualism profiles to tailor interventions that resonate with local organizational cultures. Through targeted incentives, advisory services, and collaborative platforms, policy makers can catalyze the alignment of hierarchical mandates and employee autonomy, driving sustainable performance across Kenya's manufacturing SMEs.

Similarly, policymakers and regulatory bodies should support the adoption of sustainability initiatives in SMEs by creating an enabling environment for green supply chain practices. This includes offering incentives for businesses that implement sustainable strategies, strengthening environmental regulations, and providing technical support for SMEs transitioning to eco-friendly operations. Industry associations and business networks should also play an active role in promoting sustainability awareness and knowledge-sharing among SMEs. By aligning policy interventions with business sustainability efforts, SMEs will be better positioned to achieve sustainable supply chain performance while contributing to broader environmental and economic development goals.

5.6: Limitations of the Study

The researcher encountered quite a number of challenges related to the research, most particularly during the data collection process. Due to inadequate resources, the researcher conducted this research under financial constraints. Some respondents were biased while giving information for reasons such as victimization if the research findings turned sour. Respondents were naturally suspicious and uneasy when directed to cooperate in a study of which they were not aware of the consequences. To further calm and set at ease the respondents, the researcher explained the nature of the study and its intended purpose, that it was purely an academic undertaking, and that the information divulged would be held in confidentiality by the researcher. Owing to the sensitivity of the information sought, management considered it confidential; therefore, access was at times denied or otherwise limited. This negatively affected the validity and reliability of the data collected or unnecessarily made the research impossible. The researcher mitigated this by obtaining an introduction letter, pledging confidentiality, and ensuring that the data was to be used solely for academic purposes.

5.7: Recommendations for Further Studies

Future research could explore the longitudinal impact of cultural dimensions on sustainable supply chain performance, examining how changes in organizational culture over time influence SSCPs. This study focused on a cross-sectional analysis, which captures relationships at a single point in time. A longitudinal study would provide deeper insights into how sustained efforts to foster individualism, manage power distance, and implement green supply chain practices influence long-term SSCP. Additionally, further studies could investigate the role of leadership styles in moderating the relationship between cultural dimensions and sustainability adoption in SMEs.

Further research could expand the scope beyond manufacturing SMEs in Nairobi to include a comparative analysis across different regions and industries. This would help determine whether cultural dimensions influence SSCP similarly across various business sectors and geographical locations. A cross-country study, particularly comparing SMEs in developed and developing economies, could provide insights into how external factors such as regulatory environments, economic conditions, and technological advancements shape sustainable supply chain performance. Additionally, future research could examine how industry-specific challenges, such as supply chain complexity and resource availability, impact the effectiveness of green supply chain practices.

Finally, future studies could investigate the role of emerging technologies such as artificial intelligence, blockchain, and the Internet of Things (IoT) in enhancing sustainable supply chain management within SMEs. Technology-driven solutions have the potential to mitigate the limitations posed by hierarchical decision-making structures and improve the efficiency of sustainability initiatives. Exploring how digital transformation intersects with cultural dimensions and SSCP could provide actionable insights for SMEs seeking to integrate innovative technologies into their operations. Additionally, research could assess the impact of government policies and financial incentives on adopting green supply chain practices, offering a policy-oriented perspective on sustainability in SMEs.

5.8: Chapter Summary

This section concludes the research by synthesizing its principal findings, formulating overarching conclusions, and delineating a future direction. The chapter reiterates how power distance, individualism, and green supply chain practices collectively influence sustainable supply chain performance, subsequently synthesizing these observations into overarching conclusions regarding the responsibilities of leadership, autonomy, and formal sustainability frameworks. The chapter also provides overarching recommendations for scholars, managers, and policymakers regarding the alignment of culture and practice, while also reflecting on the study's breadth and limitations, rather than examining the data. Ultimately, it highlights potential directions for future research to enhance comprehension of how firms may maintain and expand sustainable supply chain performance.

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APPENDICES

APPENDIX I: QUESTIONNAIRE

POWER DISTANCE, INDIVIDUALISM, SUSTAINABLE SUPPLY CHAIN PERFORMANCE: THE MODERATING ROLE OF GREEN SUPPLY CHAIN PRACTICES IN MANUFACTURING SMES IN NAIROBI COUNTY.

QUESTIONNAIRE FOR MANUFACTURING SMES OWNERS/ SUPPLY CHAIN MANAGERS/ OPERATIONS MANAGERS

This questionnaire examines the relationship between power distance and individualism cultural dimensions and sustainable supply chain performance under the moderating role of Green Supply Chain Practices in Nairobi County's manufacturing SMEs. Please take the time to reflect on and respond to the survey questions. Your responses will be treated with the utmost confidentiality.

RESPONDENT'S CONSENT:

I agree to participate in this research:

Yes (✓)

No ( )

SECTION A: BACKGROUND INFORMATION

1. What is your gender identity? Male ( ) Female (✓)
2. What is your highest level of education? Diploma level ( ) Graduate level ( ) Masters level ( ) PhD level (✓) Others ( )
3. What is your current position in the organization? Owner (✓) Manager ( ) Officer ( ) Other ()
4. Which part of your supply chain are you working at?
5. Supply Chain (✓) Logistics () Procurement () Production/Operations () Marketing and Sales () Other ()

(i) To what sector does your organization belong:

(ii) Building, Mining and Construction

(iii) Chemical and Allied
(iv) Energy, Electrical and Electronic
(v) ✓ Agriculture and Fresh produce
(vi) Food and Beverages
(vii) Leather and Footwear
(viii) Metal and Allied
(ix) Automotive
(x) Paper and Board
(xi) Pharmaceuticals and Medical Equipment
(xii) Plastics and Rubber
(xiii) Textiles and Apparel
(xiv) Timber wood and Furniture
(xv) Other

6. How long has your organization been in operation? Tick where appropriate.

0-5 Years ( ) 6-10 Years (✓) 10-15 Years ( ) 16-20 Years ( ) Over 20 Years ( )

7. How many employees does your organization currently have? Tick where appropriate.

Less than 10 ( ) 10-49 (✓) 50-200 ( ) More than 200 ( )

8. What is the approximate revenue for your organization? Tick where appropriate
   (i) Less than KES 5 million
   (ii) KES 5–50 million ✓
   (iii)KES 50–500 million
   (iv)Above KES 500 million

9. To what extent does your organization allocate financial resources toward sustainable supply chain initiatives?

Not at all ( ) Low Extent (✓) Moderate Extent ( ) High Extent ( ) Very High Extent ( )

10. How would you describe your organization's ability to access external financial support for sustainability projects (e.g., loans, grants)?

Very limited ( ) Limited (✓) Neutral ( ) Accessible ( ) Very Accessible ( )

SECTION B: Power Distance and Individualism Cultural Dimensions on Sustainable Supply Chain Performance

Power Distance

This section shall assess the relationship between power distance and sustainable supply chain performance in manufacturing SMEs in Nairobi County. Please mark (√) in the statement that best describes your agreement or disagreement with the following statements. The following keys will guide the respondents: - **1- Strongly Agree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly Agree.**

No.	Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
11	Decisions related to Sustainable supply chain practices are made by top management without consulting lower-level employees.				✓	
12	There is a clear chain of command that affects the implementation of sustainable supply chain practices.		✓			
13	Employees are empowered to make decisions related to sustainable supply chain practices.				✓	
14	Employees are encouraged to provide feedback on sustainable supply chain practices.				✓	

15	There is a shared responsibility for implementing sustainable supply chain practices across all levels of the organization				✓	
16	Decision-making in my organization is centralized, with most power held by a single individual or group at the top of the hierarchy.		✓			
17	The decision-making in my organization supports sustainable supply chain practices.				✓	
18	Employees are involved in the decision-making process related to sustainable supply chain practices in my organization				✓	
19	Decision-making mechanisms in my organization consider the environmental and social impacts of supply chain activities.			✓		
20	Top-level managers have a significant influence on the implementation of sustainable supply chain practices in my organization					✓

Individualism

This section shall assess the relationship between individualism and sustainable supply chain performance in manufacturing SMEs in Nairobi County. **Please mark (√) in the statement that best describes your agreement or disagreement with the following statements. The following keys will guide the respondents: - 1- Strongly Agree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly Agree.**

No.	Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
21	Employees are empowered and encouraged to take actions that promote sustainable supply chain practices.				✓	
22	Employees are free to make decisions about sustainable supply chain practices.				✓	
23	Opportunities are provided for employees to develop their skills and knowledge related to sustainable supply chain practices.				✓	
24	Feedback and input from employees related to sustainable supply chain practices are valued by giving recognition and rewards.				✓	
25	Employees are encouraged to work as a team to achieve individual goals.					✓

26	Managers in the organizations use transparent communication channels to share information about supply chain sustainability initiatives.			✓		
27	The communication practices in the organization support collaboration and coordination among different departments involved in supply chain sustainability efforts.		✓			
28	Employees feel comfortable sharing feedback and ideas about sustainable supply chain sustainability with their managers.				✓	
29	Formal communication channels are preferred to informal communication channels in sustainable supply chain practices.		✓			

Green Supply Chain Practices

This section shall assess the moderating role of Green Supply Chain Practices of manufacturing SMEs in Nairobi County. A moderating role means that with green supply chain practices, the relationship between power distance and individualism; and sustainable supply chain performance can be strong or weak. **Please mark (√) in the statement that best describes your** agreement or disagreement with the following statements. The following keys will guide the respondents: - **1- Strongly Agree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly Agree.**

No.	Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
	Green Manufacturing					
30	My organization uses clean energy such as renewable energy in our manufacturing processes		✓			
31	Waste reduction strategies are implemented in manufacturing to promote sustainability.				✓	
32	The company regularly updates its manufacturing processes to be more environmentally friendly.				✓	
33	There is an emphasis on reducing the carbon footprint of manufacturing activities.			✓		
34	Lean manufacturing practices are adopted to minimize waste and improve sustainability.				✓	
	Green Procurement					
35	The company prefers suppliers who have green certifications or eco-friendly practices.			✓		
36	Sustainable materials are prioritized in procurement decisions.				✓	

37	Procurement teams are trained in sustainable sourcing practices.			✓		
38	My organization assesses the environmental impact of products and services before purchasing.		✓			
39	Green procurement has led to cost savings and improved supply chain sustainability.				✓	
	Eco-Design					
40	Products are designed with energy efficiency in mind.			✓		
41	The company focuses on creating recyclable or reusable products.					✓
42	A life cycle assessment is conducted to measure the environmental impact of new products.		✓			
43	Products are designed to use fewer raw materials and reduce waste.					✓
44	Environmental considerations are embedded in every stage of the product design process.				✓	

Sustainable supply chain performance

This section shall assess the sustainable supply chain performance of manufacturing SMEs in Nairobi County. Please mark (√) in the statement that best describes your agreement or disagreement with the following statements. The following keys will guide the respondents: - **1- Strongly Agree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly Agree.**

No.	Statement	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
	Environmental performance					
45	My organization prioritizes the reduction of greenhouse gas emissions in the supply chain.				✓	
46	My organization manages its water usage and waste generation in the supply chain.					✓
47	My organization seeks to invest in environmentally friendly projects.			✓		
48	My organization recycles waste produced by supply chain operations.				✓	
49	My organization complies with environmental standards in all aspects of our supply chain operations.				✓	
	Economic Performance					
50	Adopting sustainable practices has improved our					

	organization's position in the competitive market.				✓	
51	Our focus on sustainability has helped us mitigate financial risks associated with regulatory compliance					✓
52	The organization recycles waste produced by supply chain operations.				✓	
53	We comply with environmental standards in all aspects of our supply chain operations.				✓	
54	The company invests in eco-friendly projects to enhance sustainability.			✓		
	Social Performance					
55	My organization considers sustainable and ethical sourcing practices in the supply chain operations.				✓	
56	The company ensures fair labour practices within its supply chain.					✓
57	My organization promotes social responsibility in its supply chain activities.			✓		
58	My organization ensures the health and safety of workers in its sustainable supply chain operations.					✓

59	The development and well-being of communities surrounding the organization are prioritised.					✓

Thank you for your time.

APPENDIX II: PARTICIPANT INFORMATION AND CONSENT FORM

I would like to invite you to participate in my research study. Before you decide, you must understand why the research is being done and what it would involve for you. Please take time to read this information and discuss it with others if you wish. If anything is unclear or if you would like more information, please ask.

RESEARCH TITLE

POWER DISTANCE, INDIVIDUALISM, SUSTAINABLE SUPPLY CHAIN PERFORMANCE: THE MODERATING ROLE OF GREEN SUPPLY CHAIN PRACTICES IN MANUFACTURING SMES IN NAIROBI .

SECTION 1: INFORMATION SHEET

1.1 Researcher: **Allan Peter Maingi Waweru**

1.2 Institutional affiliation: **Strathmore University**

SECTION 2: INFORMATION SHEET–THE STUDY

2.1: Why is this study being carried out?

This study is being conducted in partial fulfilment of the requirement for an award of the Master of Commerce degree at Strathmore University Business School. It seeks to identify the influence that power distance and individualism have over sustainable supply chain performance among manufacturing SMEs in Nairobi .

2.2: Do I have to take part?

No. Taking part in this study is optional, and the decision is yours. If you decide to participate, you will be asked to complete a questionnaire to get information on the **topic** under study**.** You are free to decline to participate in the study at any time without giving any reasons.

2.3: Who is eligible to take part in this study?

SME owners, Supply chain personnel, or operational managers.

2.4: Who is not eligible to take part in this study?

Any members of the organization who are not involved in the supply chain management decisions/strategy committee and have little or no information on Supply chain strategies and team members who are not allowed by the organization to participate in such studies.

2.5: What will taking part in this study involve for me?

The researcher will contact you and request that you participate in the study. If you are satisfied that you fully understand the goals behind this study, you will be asked to sign the informed consent form (this form), which will then be followed by a questionnaire to complete.

2.6: Are there any risks or dangers in participating in this study?

There are no known risks in taking part in this study. All the information you provide will be treated as confidential and will not be used in any way without your express permission.

2.7: Are there any benefits of taking part in this study?

The information will be used to improve the body of knowledge regarding power distance and individualism and their influence on sustainable supply chain performance among manufacturing SMEs in Nairobi .

2.8: What will happen if I refuse to participate in this study?

Participation in this study is entirely voluntary. Even if you decide to take part at first but later change your mind, you can withdraw anytime without explanation.

2.9: Who will have access to my information during this research?

All research records will be stored securely. Only those closely concerned with this study will have access to your information. All your information will be kept confidential.

2.10: Whom can I contact if I have further questions?

You can contact me, Allan Peter Maingi Waweru, at Strathmore Business School by e-mail at maingi.waweru@strathmore.edu or by phone at +254 799 658 752. You can also contact my supervisor, Prof. Jonathan Annan at the Strathmore Business School, Nairobi, or by e-mail at

jannan@strathmore.edu or Mary Aming'a, at the Strathmore Business School, Nairobi, or by e-mail at maminga@strathmore.edu If you want to ask someone anything about this research, please contact The Secretary–at Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi, email ethicsreview@strathmore.edu Tel number: +254 703 034 375.

I, Kamau Duncan, have understood all that I have read and have had any of my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you.

Participation in the research study

☑ I AGREE to take part in this research

☐ I DO NOT AGREE to take part in this research

Storage of information on the completed questionnaire

☑ I AGREE to have my completed questionnaire stored for future data analysis

☐ I DO NOT AGREE to have my completed questionnaire stored for future data analysis

Participant's

Signature/Initials: ______________ Date: 04 / 03 / 2025 DD/MM/YEAR

I, Allan Peter Maingi Khamau, certify that I have followed the SOP for this study and have explained the study information to the study participant named above and that s/he has understood the nature and the purpose of the study and consents to the participation in the study. S/he has been allowed to ask questions which have been answered satisfactorily.

Researcher's Signature:

______________ Date: 04 / 03 / 2025 DD/MM /YEAR

APPENDIX III: LIST OF REGISTERED MANUFACTURING SMES

No	Name
AUTOMOTIVE	
1	Access Motorsports Ltd
2	Ace Autocentre Ltd
3	Amani Vehicle Sounds
4	Asami Motor Services Ltd
5	Associated Battery Manufacturers (EA) Ltd
6	Auto Aunciliaries Ltd
7	Auto Doc's Ltd
8	AutoCrateek Republic
9	Auto-Prog Diagnostics
10	AutoTech Garage Ltd
11	Autotronics Performance Garage
12	Autotronix Telematics Ltd
13	AutoXpress Ltd
14	Axel Engineering Kenya
15	Ball Joint Engineering Co Ltd
16	Bethel Motors East Africa Ltd
17	Bhachu Industries Ltd
18	Boss Customz Ltd.
19	Call a Ride Limited
20	Car & General Kenya
21	Central Motor Service Ltd.
22	Chui Auto Springs Industries Ltd
23	Cica Motors Kenya
24	Controltech Ltd
25	Digital Bass Auto
26	Dreamcoat Automotive Refinishing Products Ltd
27	Executive Super Rides Ltd.
28	First Class Seating Company Limited
29	General Engineering Works Ltd
30	Ineax Motors Ltd
31	Innovate Engineering Solutions (Audi Workshop)
32	Itrace Africa Ltd
33	JDM Auto Kenya
34	John's Refrigeration & Air Conditioning Ltd.
35	Kenbrayo Electrical and Mechanical Engineering
36	Kibo Africa Limited
37	Kuza Automotive

38	Lochab Transport
39	Malva Coach Builders
40	Monte Auto Services
41	Mutsimoto Motor Co. Ltd
42	Oil Seals and Bearings Centre Ltd
43	Orbit Engineering Ltd
44	Pinnacle Systems Ltd
45	Pipe Manufactures Ltd
46	RepairNet Inc
47	Rucha Tyres
48	Sagoo Holdings Ltd
49	Shamas Motor Spares Ltd
50	SpareZone Kenya
51	Specialised Fibreglass Ltd
52	The Glass Shop
53	Top Quality Motors
54	Unity Auto Garage
55	Universal Tyres & Systems (K) Ltd
	Building, Mining and Construction
56	Advanced Builders Hardware
57	BD Studios
58	Birdi Civil Engineers Ltd
59	Brima Building & Construction Limited
60	Buildafrique Group
61	Chirag Builders Limited
62	C-MAX Advanced Building Systems Ltd
63	Container Design Africa
64	Design Key Builders
65	Ecoliff East Africa Ltd
66	Epco Builders Limited
67	EPS Panels Kenya
68	Famio Services Ltd
69	Ganatra Plant & Equipment Ltd
70	Gelpha Limited
71	Green Pavers
72	Gumpex International Ltd
73	Intex Construction Ltd
74	Intex Construction Ltd
75	Kafum Engineering Services
76	Kings Developers Ltd
77	KOTO Housing Kenya
78	Landmark Holdings Ltd.

79	Lee Construction Ltd
80	Mandhir Construction Ltd
81	Milicons Limited
82	Omya East Africa Ltd
83	Pacific Projects Ltd
84	Rockvilla III Estate
85	Rupra Construction Co.
86	RUSMI General Contractors
87	Seyani Brothers & Company (K) Limited
88	Sobetra Kenya
89	Wallcare Building Contractors
90	Warren Enterprises Ltd
Food and Beverages	
91	Afribon
92	Africa Tea Brokers Ltd
93	African Orginals
94	Afrimac Nut Company Ltd
95	Alpha Fine Foods Ltd
96	Ando Foods
97	Baguette Ltd.
98	Bakers Corner Ltd
99	Bio Food Products Ltd
100	BIOSORRA
101	Candy Kenya Ltd
102	Capel Food Ingredients
103	Chirag Kenya Ltd
104	Edibowl Foods Limited
105	Energy Foods Ltd
106	Farm to Feed Ltd.
107	Food4Education
108	Joy Food Industries
109	Juice Palm Kenya Ltd
110	Juicee Fruits
111	Koko Networks
112	Melvin Marsh International Ltd
113	Mhogo Foods Limited
114	NatureLock
115	OZ Foods & Beverages Ltd
116	Peafoods Processing Company Ltd
117	Selina Wamucii Ltd
118	Suntory Beverage & Food Kenya Ltd
119	Tropikal Ltd

120	Viva Global
121	Winnie's pure health
	Energy, Electrical and Electronic
122	Avery Ltd
123	Azuri Technologies
124	Betatrad Kenya Ltd
125	Chloride Exide Kenya Ltd
126	EcoZoom Kenya
127	Electro-Mechanical Solutions Ltd
128	Green Energy Solutions Ltd
129	Kenmet Ltd
130	Master Power Systems Ltd
131	Nexus Solar
132	Ocean Energy Ltd
133	Orb Energy Kenya
134	Power Technics Ltd
135	PowerGen Renewable Energy
136	Powerpoint Systems EA Ltd
137	Solar Panda
138	SolarNow Kenya
139	Solinc East Africa
140	Strauss Energy
141	SunCulture Kenya Ltd
142	SunTransfer Kenya
	Textiles and Apparel
143	Alpha Woolens Ltd
144	Bhupco Textile Mills Ltd
145	Bunny Ltd
146	Fine Spinners Ltd
147	Joyknitts Garments Ltd
148	Kawa Garments Limited
149	LVL Apparels
150	Masken Garments Limited
151	Midco Textiles Ltd
152	Omega Apparels Ltd
153	Oriental Mills Ltd
154	Polo Industries Ltd
155	Sunflag Textile and Knitwear Manufacturing Ltd
156	Supra Textile Ltd
157	United Textile Industry (K) Ltd
	Timber, Wood and Furniture
158	Allahu Timber Yard

159	Complast industries
160	Corenet
161	Furniture Elegance Ltd
162	Giant Quick Team Services
163	Grevillea Industries Ltd
164	Impala Carpentry Ltd
165	Kika Investments
166	M&M Agencies
167	Panesar's Kenya Ltd
168	Premium Timber Suppliers
169	Saif Properties Limited
170	The Phoenix Ltd
171	Wason's Enterprises Ltd
172	Woodways Kenya Ltd
Chemical and Allied	
173	Chardust Ltd
174	Chemical and school supplies
175	Dalco Kenya Ltd
176	Dawa Life Sciences
177	Dentex Ltd
178	Dera Chemical Industries (K) Ltd
179	FaramEa Ltd
180	Impact Chemicals Ltd
181	New Millennium Chemical Industries Ltd
182	Omex EA Ltd
183	Oriental Products Limited
184	Pantel Chemicals Ltd
185	Tropikal Ltd
186	Zami Chemicals Ltd.
Paper and Board	
187	Carton Manufacturers Ltd
188	Dune Packaging Ltd
189	Flora & Fame Paper Company
190	Mega paper and Boards Ltd
191	Nevya Holdings Ltd
192	Palm Tree (Kenya) Ltd
193	Paperbags Limited
194	Prime Cartons Ltd
195	Quickpack Ltd
196	Silpack Industries Ltd
197	Transpaper Kenya Ltd
Ahriculture and Fresh Produce	

198	Agriner Agricultural Development
199	Alpha Grain Millers Ltd
200	Bdelo Ltd
201	Jani Fresh Ltd
202	Kandia Fresh Produce Suppliers
203	Kandia Fresh Produce Suppliers Ltd
204	Minjingu Organic Fertilizers Ltd
205	SokoFresh
206	Tawi Fresh
207	Wanda Organic
	Pharmaceuticals and Medical Equipment
208	Biodeal Laboratories Limited
209	Cosmos Pharmaceutical Limited
210	Didy Pharmaceutical
211	Diversey Lever
212	Elys Chemical Industries Ltd
213	Globe Pharmacy Ltd
214	High Chem East Africa Ltd
215	Mac's Pharmaceutical Ltd
216	Manhar Brothers (Kenya) Ltd
217	NextGen Pharmaceuticals (K) Ltd
	Plastic and Rubber
218	Canaan Plastics Ltd
219	Coninx Industries Limited
220	Gjenge Makers Ltd
221	Krona Plastics Ltd
222	Polyflex Industries Ltd
223	R & R Plastic Ltd
	Leather and Footwear
224	Leather Masters Ltd
225	Leather Trading Co.
226	Maridadi Seasons Handcraft
227	Palm Prints African Artifacts
228	Reddamac Leather Center
	Metal and Allied
229	Bestcare Services
230	Canton Steel Fabricators
231	General Aluminum Fab Ltd
232	Ramakika Limited
233	Toolcrafts Limited

APPENDIX IV: STUDY BUDGET

Items	**Details**	**Cost**
Stationary	Printing Papers	1,000.00
	Binders	1,000.00
Airtime		3,000.00
Data Collection	Internet	3,000.00
Production of documents	Printing	1,000.00
	Photocopying	2,500.00
	Binding	1,500.00
Transport		5,500.00
Data Analysis		10,000.00
Research	KAM Directory	2,500.00
Total		**31,000.00**

APPENDIX V: RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **911788**

Date of Issue: **26/February/2025**

RESEARCH LICENSE

This is to Certify that Mr.. Allan Peter Maingi of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: POWER DISTANCE, INDIVIDUALISM, AND SUSTAINABLE SUPPLY CHAIN PERFORMANCE: THE MODERATING ROLE OF GREEN SUPPLY CHAIN PRACTICES IN MANUFACTURING SMEs IN NAIROBI COUNTY for the period ending : 26/February/2026.

License No: **NACOSTI/P/25/416425**

911788

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

APPENDIX VI: UNIVERSITY APPROVAL

Strathmore UNIVERSITY

21st February 2025

Mr Waweru Allan,
maingi.waweru@strathmore.edu

Dear Mr Waweru,

RE: Power Distance, Individualism, and Sustainable Supply Chain Performance: The Moderating Role of Green Supply Chain Practices in Manufacturing SMEs in Nairobi County

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2605/25.** The approval period is from **21st February 2025 to 20th February 2026.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

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