GREEN PROCUREMENT PRACTICES AND PERFORMANCE OF KENYA MOTOR DEALERSHIPS, NAIROBI CITY COUNTY, KENYA

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ABSTRACT

This research investigated the impact of green procurement practices on the performance of motor dealerships in Nairobi City County, Kenya, in response to the growing global emphasis on sustainability. It aimed to fill the gap in empirical evidence regarding how these practices affect key performance metrics such as lead time, inventory turnover, and capacity utilization within Kenyan motor dealerships. The study examined green procurement strategies: reverse logistics, and logistics innovation. The findings revealed that reverse logistics practices such as zero-waste returns operations, sustainable disposal methods, and recycling partnerships were essential in optimizing inventory management, enhancing capacity utilization, and minimizing waste. Logistics innovations, including e-logistics systems, solar-powered warehousing, and electric vehicle technology, contributed to reduced lead times and operational costs while enhancing overall performance. The study concludes that reverse logistics and logistics innovation, each play a crucial role in enhancing the performance of motor dealerships. These practices lead to shorter lead times, improved inventory turnover, and better capacity utilization, while also aligning with broader sustainability objectives. Recommendations Additionally, dealerships should refine reverse logistics practices to focus on zero-waste returns, sustainable disposal, and effective recycling. Furthermore, investing in logistics innovations such as paperless documentation, solar-powered warehousing, and electric vehicles will help improve operational performance and reduce environmental impact. Future research should explore the impact of these practices in different regions or sectors to validate the findings across various contexts. It should also investigate how market trends and consumer preferences influence logistics performance and examine additional factors like leadership styles and organizational culture that could affect the effectiveness of green procurement practices. These insights will help optimize logistics practices and enhance performance and sustainability in the industry.

Key Words: Green Procurement Practices, Performance of Motor Dealerships, Green Procurement Strategies, Reverse Logistics, Logistics Innovation

Background of the study

Green procurement, also known as environmentally friendly or sustainable procurement, represents a strategic approach to purchasing that integrates environmental considerations into the procurement process (Sarkis et al., 2021). It involves prioritizing products, services, and practices that minimize negative environmental impacts and promote sustainability throughout the supply chain (Nasiche & Ngugi, 2014). This concept has gained increasing attention in recent years as businesses worldwide recognize its importance in enhancing environmental performance and ensuring long-term sustainability (Sarkis et al., 2021).

Across various industries, there has been a noticeable shift towards green procurement practices. This trend is underscored by the growing recognition of the environmental challenges facing businesses and the imperative to adopt sustainable strategies (Nasiche & Ngugi, 2014). The automotive sector, in particular, faces significant environmental challenges due to itssubstantial contribution to carbon emissions (Hassan et al., 2021). As one of the largest industries globally, the automotive sector plays a crucial role in economic development. However, this growth comes with environmental consequences, necessitating the adoption of sustainable practices to mitigate the industry's environmental footprint while maintaining operational efficiency (Hassan et al., 2021). In response to these challenges, there is a growing recognition of the importance of green procurement practices in the automotive industry (Nasiche & Ngugi, 2014). From vehicle manufacturing to dealership operations, there arenumerous opportunities to integrate sustainability into the automotive supply chain (Hassan et al., 2021). By prioritizing environmentally friendly practices, automotive companies can reduce their environmental impact, enhance brand reputation, and drive long-term value creation (Sarkis et al., 2021).

In East Africa, including countries like Kenya, Tanzania, and Ethiopia, the automotive sector is experiencing rapid growth (UNIDO, 2021). Kenya, in particular, has positioned itself as a hub for automobile assembly and sales, attracting investment from both domestic and international players (UNIDO, 2021). However, this growth comes with environmental challenges, particularly in urban areas like Nairobi City County. Motor dealerships play a crucial role in theautomotive ecosystem, serving as intermediaries between manufacturers and consumers.

In Nairobi City County, motor dealerships are significant contributors to the local economy,providing employment opportunities and driving economic growth. However, like other businesses, motor dealerships face increasing pressure to adopt sustainable practices to mitigate their environmental impact (UNIDO, 2021). Despite the growing awareness of green procurement practices, there is a notable lack of empirical research examining their impact on the performance of motor dealerships in Nairobi City County (Nasiche & Ngugi, 2014). This research gap presents an opportunity to explore the specific relationship between green procurement practices and dealership performance within the unique context of the Kenyan automotive industry.

Therefore, this study sought to address this gap by examining the specific impact of green procurement practices on the performance of motor dealerships in Nairobi City County, Kenya. The primary objectives of the research are to explore the current state of green procurement practices among motor dealerships in Nairobi City County, assess the impact of green procurement practices on dealership performance indicators, identify barriers and challenges to the adoption of green procurement practices in the automotive sector in Nairobi City County, and provide recommendations for enhancing the adoption of green procurement practices among motor dealerships in Nairobi City County (Nasiche & Ngugi, 2014). By elucidating the relationship between green procurement practices and dealership performance, this research aims to provide valuable insights for industry stakeholders (UNIDO, 2021). These insights can inform decision-making processes, foster innovation, and drive positive environmental and economic impacts within the Kenyan automotive industry (Sarkis et al., 2021). In conclusion, the integration of green procurement practices into the operations of motor dealerships is critical for fostering environmental sustainability and long-term competitiveness. This study aims to explore this relationship and contribute to the advancement of sustainable practices in the Kenyan automotive industry. Through comprehensive

research and analysis, we can better understand the role of green procurement in shaping the future of the automotive sector in Nairobi City County and beyond (UNIDO, 2021).

Statement of the problem

In the wake of escalating global concerns about unchecked climate change, businesses face mounting pressure to implement green procurement practices (Quyen, 2020). Green procurement involves sourcing products and services that have a reduced environmental impact,thus playing a critical role in sustainable business operations. Despite the fervent advocacy for these measures, the actual efficacy of green procurement remains uncertain, casting doubt on itsability to address environmental degradation (Tatrai, 2015). Within Kenya's automotive sector, despite notable advancements, persistent challenges in lead time, inventory turnover, and capacity utilization hamper operational efficiency and financial stability, thus inhibiting profitability and growth.

Lead time, an essential factor for operational efficiency, remains stagnant at an average of 6 to 8 weeks, impeding the industry's agility in meeting market demands (AutoCJ, 2023). Similarly, the lack of transparency in inventory turnover rates obscures the sector's financial stability, complicating strategic planning anddecision-making (J. Mutua, 2023). Moreover, the industry's low capacity utilization rate of 36% signifies significant underutilization of resources, further hindering profitability and growth potential (Department for Industrialization, 2019). Green procurement can directly address these operational inefficiencies. By sourcingenvironmentally friendly materials and adopting sustainable practices, automotive dealerships can reduce lead times through streamlined supply chains and improved resource allocation. Transparent inventory management systems, which are often part of green procurement strategies, can enhance financial stability and strategic decision-making.

Furthermore,optimizing capacity utilization through sustainable practices can lead to better resource use and increased profitability. Addressing these challenges is imperative for enhancing profitability within the automotive sector. Improving lead time, inventory turnover, and capacity utilization through green procurement can streamline operations, optimize resource allocation, and ultimately drive financial success. The withdrawal of industry heavyweight General Motors (GM) from the East African region serves as a stark reminder of the sector's challenges, Bosire, D., & Owour, D. E. (2018). GM's divestment of its stake in General Motors East Africa (GMEA) to Isuzu Motors Ltd of Japan marks a seismic shift in the region's automotive landscape. Yet, amidst this upheaval, the industry faces a pressing need to confront its operational inefficiencies andembrace sustainable procurement practices (Gachukia, 2018). These inefficiencies have a significant negative economic impact. The automobile industry's GDP contribution was 1.5% in 2015, down to 1.3% in 2019, according to the Kenya National Bureau of Statistics (KNBS). Kenya National Bureau of Statistics, Economic Survey Report, (2020).

Furthermore, employment in the industry has remained stable over the last five years, indicating the industry's difficulty seizing market opportunities (Kenya National Bureau of Statistics, Economic Survey Report, 2021). By integrating green procurement practices, the automotive sector can create new job opportunities in the green economy, enhance its GDP contribution, and align with global sustainability trends. Calls for global sustainability resonate ever louder, demanding a paradigm shift in Kenya's automotive industry. The time for complacency is over. Industry stakeholders must recognize green procurement not as a checkbox exercise, but as a catalyst for transformative change (Awuor & Jaffer, 2015). Failure to do so risks relegating the sector to irrelevance in anincreasingly eco-conscious world (Sasaka, 2014).

The challenge is clear, the stakes are high, and decisive action is imperative. The impact on the broader economy, particularly Nairobi, is equally significant. Nairobi, as the commercial hub, experiences direct consequences of inefficiencies in the automotive sector through reduced business activity and lower economic growth. Enhanced efficiency and sustainable practices in the automotive sector, facilitated by green procurement, could potentially increase Nairobi's GDP by up to 0.5% annually, translating to an additional KES 10 billion in economic activity, World Bank, Finance for an equitable recovery, (2022).

This highlights the critical need for addressing the operational and sustainability challenges within the sector, thereby driving economic prosperity and stability in both Nairobi and Kenya at large. Additionally, a thorough grasp of the connection between Kenyan car dealership performance and green procurement practices—particularly in the context of Nairobi City County—is lacking in the body of existing work. Though sustainable business practices are becoming more and more important worldwide, there is still a large body of literature that focuses on the application and results of green procurement strategies in Kenya's automobile sector. Consequently, there is a need to investigate the extent to which green procurement practices are adopted by motor dealerships in Nairobi City County and how these practices influence their overall performance. By addressing this gap, this study aims to contribute to the existing body of knowledge on sustainability in the automotive sector and provide valuable insights for policymakers, industry practitioners, and other stakeholders seeking to promote environmentally responsible business practices.

Research Objectives

The study's main objective was to determine the effect of green procurement practices on the performance of Kenyan motor dealerships in Nairobi City.

Specific objectives

   i.   To examine the effects of reverse logistics on performance of Kenya MotorDealerships in Nairobi County

   ii.   To establish the benefit of Logistics Innovation on the performance of KenyaMotor Dealerships in Nairobi County.

LITERATURE REVIEW

Theoretical Review

The Closed-Loop Supply Chain Theory

The study used the Closed-Loop Supply Chain Theory to help determine how reverse logistics management affects the performance of Kenyan car dealerships. The authors of this hypothesis are Guide & Jayaraman (2007). According to Wassenhove et al. (2010), the Closed-Loop Supply Chain Theory emphasizes the reuse, recycling, and recovery of materials to reduce waste and optimize efficiency. It prescribes the methodical management of resources and products in a continuous cycle. Closed-loop supply chain (CLSC) as one of the important configurations of the circular economy (CE) has received considerable attention in sustainability matters. It is composed of characteristics that, whenidentified, studied, and categorized, help not only to a better understanding of the current contributions in the literature but also lead to formulating new models, Shekarian, E. (2020). Closed-loop supply chains are complex systems as they involve the seamless backward and forward flow of products and information. With the advent of e-commerce and online shopping, there has been a growing interest in product returns and the associated impact on inventory variance and the bullwhip effect, Papanagnou, C. I. (2022).

The Closed-Loop Supply Chain Theory, Guide & Jayaraman, (2007), places a strong emphasis on reverse logistics integration and product return management. After a product's useful life is gone, this idea emphasizes the importance of handling it sustainably and efficiently Gallagher & Lamb (2023). The Closed-Loop Supply Chain Theory plays a crucial role in supporting sub-independent variables related to recycling, recall programs and procedures, and returns management in the supply chain of Kenyan car dealership participants. According to this theory, supply chains ought to have a circular structure rather than a linear one Batista et al (2018).

Products in a closed-loop supply chain are regarded as valuable resources that can be recycled, remanufactured, or recovered rather than being thrown away Mishra et al (2003). Such a strategy is in line with the ideas of resource efficiency and environmental sustainability. The management of product returns and waste reduction within supply chains is theoretically supported by the Closed-Loop Supply Chain Theory. In order to minimize the impact on the environment and reduce waste,

it emphasizes the importanceof strategies that involve gathering, recycling, and reusing materials and products Knauer & Stamm (2022). This theory can be used to explain how recycling programs and efficient reverse logistics procedures are essential to accomplishing sustainability goals in the context of Kenya's auto dealers. Organizations in the automotive dealership sector can help reduce waste, conserve resources, and align their operations with environmental sustainability goals by comprehending and putting the Closed-Loop Supply Chain Theory's principles into practice. In industries like the Kenyan automotive dealership sector, where resource efficiency and sustainability are becoming increasingly important, the Closed-Loop Supply Chain Theory provides insightful management of returns, recycling, and sustainability in supply chains. Reverse logistics is an integral part of the closed-loop supply chain, focusing on the recovery and recycling of products and materials at the end of their life cycle, Feldmann (2020). Returns management involves the efficient handling and processing of returned products, ensuring that they are reintegrated into the supply chain for reuse or recycling, Migdadi. (2023). Recall programs and recycling practices also contribute to the closed-loop system by managing products at the end of their useful life, Lu et al (2019).

Recycling is at the core of the closed-loop supply chain, where materials and products are recovered, reprocessed, and reintegrated into the production process, Govindan et al (2015). Waste management practices focus on diverting waste from landfill and maximizing recycling opportunities, aligning with the closed-loop approach by maintaining the flow of materials within the system. Circular economy initiatives promote the reuse and recycling of materials, contributing to the sustainability of the supply chain. Green fleet management, end-of-life vehicle management, and sustainable packaging solutions all contribute to the closed-loop system by reducing waste and resource consumption and guaranteeing that materials and products are recycled or repurposed at the end of their life cycles. The Flapper group (2021) The closed-loop supply chain requires consumer awareness and participation since they affect the demand for recycled goods and promote sustainable consumption practices. Shevchenko (2023). By promoting awareness and incentivizing participation in recycling programs, motor dealerships can stimulate the circulation of recycled materials back into the supply chain. This aligns with the closed-loop approach by creating a feedback loop where consumers contribute to the sustainable management of resources and products.

Conducting environmental impact assessments is integral to the closed-loop supply chainas it enables the measurement and optimization of sustainability performance. By assessingthe environmental footprint of recycling initiatives, motor dealerships can identify areas for improvement and implement strategies to minimize resource consumption and waste generation. This aligns with the closed-loop approach by promoting continuous improvement and environmental stewardship throughout the supply chain. Closed-loop product design is a fundamental principle of the closed-loop supply chain, emphasizing theimportance of designing products for recyclability and reusability. By incorporating closed-loop design principles, such as easy disassembly and the use of recyclable materials, motor dealerships can facilitate the recycling process and ensure that products circulate within the closed-loop system. This aligns with the closed-loop approach by promoting the efficient use of resources and minimizing waste throughout the product life cycle.

Logistics innovation is intricately linked to the closed-loop supply chain theory. Theclosed-loop supply chain concept emphasizes the cyclical flow of materials and products, aiming to minimize waste and maximize resource efficiency.nE-logistics involves the use of digital platforms and technologies to streamline the logistics process, encompassing activities such as transportation, warehousing, inventory management, and distribution, Kannabiran & Ariff, (2022). By leveraging e-logistics systems, organizations can optimize their logistics activities, leading to improved efficiency and cost savings. In the context of the closed-loop supply chain, e-logistics facilitates better traceability and transparency throughout the logistics process. As a result, businesses are better equipped to decide how best to move goods and components while maintaining sustainability objectives. Additionally, e-logistics systems can incorporate environmental standards into the processes used to choose suppliers, giving preference to those who follow environmentally friendly guidelines and support closed-loop supply chains by providing recyclable or reuse products.

Power Dependence Theory

A social and organizational theory called "Power Dependence Theory" looks at how powerdynamics within and between organizations affect choices and results (Emerson, 1962). PDT suggests that power imbalances in supply chain relationships can influence decision- making and outcomes. In the context of lean supply practices within Kenya Motor Dealerships, power dynamics with suppliers regarding sustainable sourcing and renewable energy adoption may affect procurement decisions. For instance, if a dealership is highly dependent on a particular supplier for sustainable materials or renewable energy solutions, the supplier may have more bargaining power, potentially affecting pricing and terms. Understanding power dynamics through PDT can help motor dealerships navigate supplier relationships effectively and ensure fair and sustainable procurement practices. Based on the frequent use of terms like power, influence, dominance, submission, status, and authority, it's clear that the significance of power is widely acknowledged. However, there's significant ambiguity surrounding these ideas. The effort to diminish costs within power-dependent relationships manifests in diverse ways. Cost reduction entails a shift in values aimed at alleviating the burdens of satisfying someone with significant power.When evaluating dependency, it's essential to consider the costs associated with alternativeoptions, Emerson, R. M. (2019). Traditionally, organization theorists have differentiated 'power' from 'authority' based on the concept of 'legitimacy'. In this framework, power is seen as a 'capacity' that exists outside the formal structure of authority within an organization. Organizations have typically been perceived as cohesive and uniform entities where these capacities operate. However, an alternative perspective posits that organizations are comprised of various locales intersected by arenas where agencies, powers, networks, and interests are formed. In this view, power isn't a static entity but rather a dynamic process shaped within ongoing struggles. Moreover, power is always contextualized within rules, which cannot independently dictate their own interpretation but rely on the agencies that interpret,signify, or imply them. While specific disciplinary approaches in organization studies may dictate certain interpretations, it's argued that they cannot offer a comprehensive theory of organizations, Clegg, S. R. (2019). In the realm of green procurement and motor dealership performance, the traditional view of 'power' versus 'authority' finds new relevance. Traditionally, power has been seen as existing outside formal structures, while authority is grounded in legitimacy within those structures. However, within this context, organizations are better understood as complex ecosystems where power dynamics unfold in negotiations, regulations, consumer demands, and internal structures. These dynamics influence decisions on environmentally sustainablepractices and supplier relationships. Interpretations of green procurement rules are shaped by stakeholders' interests, leading to varied implementations. While organization studies offer insights, they may not fully capture the complexities of power dynamics within greenprocurement and dealership operations. Understanding these dynamics is crucial for fostering sustainable procurement strategies in the automotive industry.

PDT highlights the influence of power dynamics on inter-organizational relationships and decision-making. In the context of reverse logistics, power imbalances between motor dealerships and manufacturers or customers may affect the handling of returns, recalls, anddisposal processes. For example, manufacturers with greater market power may impose return policies or disposal requirements that favor their interests, potentially increasing costs or operational constraints for dealerships. PDT can help motor dealerships analyze power dynamics and negotiate mutually beneficial agreements with stakeholders to optimize reverse logistics operations and minimize disruptions.

PDT highlights the influence of power dynamics on organizational relationships and behaviors, Choudhury & Khanna (2014). In the context of recycling initiatives, power imbalances between motor dealerships and stakeholders, such as consumers, regulators, or recycling partners, may impact decision-making and cooperation. For example, dealershipswith strong market power may influence consumer behavior through awareness campaignsor product design choices to promote recycling. PDT can help motor dealerships understand power dynamics with stakeholders, negotiate collaborative partnerships, and leverage their influence to drive sustainable recycling practices and outcomes.
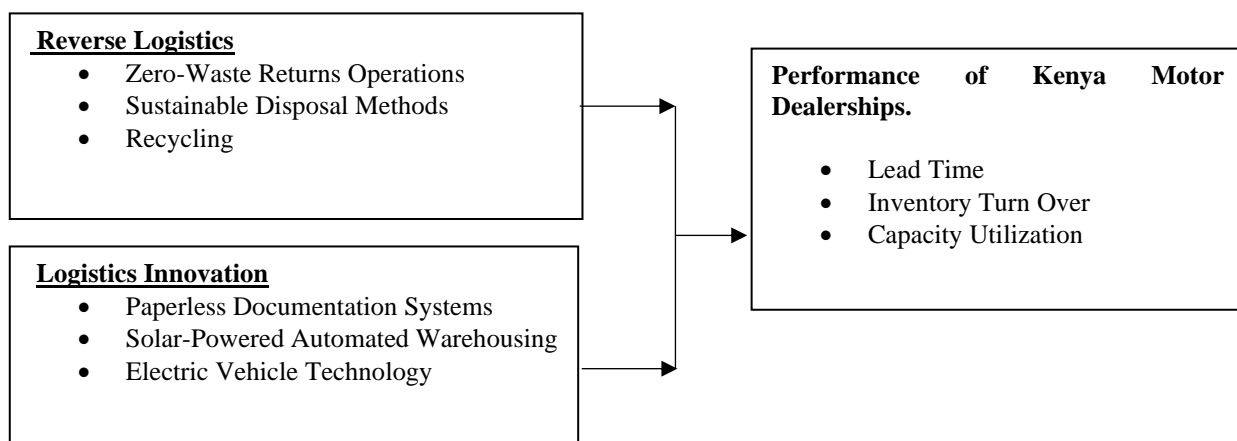
PDT suggests that power imbalances can shape interactions and outcomes in supply chain relationships, Emerson (2019). When adopting logistics innovations like e- logistics or negotiating contracts for eco-friendly packaging solutions, Kenya Motor Dealerships may encounter power dynamics with suppliers or technology providers. Suppliers with proprietary technology or expertise may wield greater power innegotiations, influencing pricing, terms, or implementation timelines. Understanding power dynamics through PDT can help motor dealerships navigate procurement decisions, mitigate risks, and negotiate equitable agreements that support sustainable innovation adoption.

Conceptual Framework

A conceptual framework consists of a thorough explanation of the phenomenon being studied, along with a graphical or visual representation of the study's key variables (Ngechu, 2009). A conceptual framework, according to Kothari (2014), is a diagrammatical depiction that illustrates the connection between the dependent variables. According to Kothari (2014), an independent variable is one that the researcher modifies to ascertain its impact or influence on another variable. The conceptual framework for this investigation is displayed in Figure 2.1.

Independent Variables   **Dependent Variable**

Reverse Logistics
• Zero-Waste Returns Operations
• Sustainable Disposal Methods
• Recycling

Performance of Kenya Motor Dealerships.
• Lead Time
• Inventory Turn Over
• Capacity Utilization

Logistics Innovation
• Paperless Documentation Systems
• Solar-Powered Automated Warehousing
• Electric Vehicle Technology

Figure 2. 1: Conceptual Framework

Reverse Logistics

Reverse Logistics involves managing product returns, recalls, and disposal processes within the supply chain. It plays a crucial role in enhancing sustainability and operational efficiency (Julianelli et al., 2020). This field encompasses the processes of returning goods from end consumers back to manufacturers or retailers, handling recalls, and managing disposal procedures. Effective reverse logistics is essential for minimizing waste, recovering value from returned products, and reducing environmental impact.

Zero-Waste Returns Operations is a key aspect of reverse logistics focused on minimizing waste generated from returned products. This approach involves optimizing the returns process to ensure that as much material as possible is reused, repaired, or refurbished, rather than discarded. By implementing zero-waste strategies, companies can significantly reduce the volume of waste sent to landfills and enhance the sustainability of their returns operations.

Sustainable Disposal Methods are critical for ensuring that discarded products or materials are handled in an environmentally responsible manner. This includes employing disposal techniques that minimize environmental impact, such as safe and efficient recycling processes, energy recovery, and responsible waste management practices. Adopting sustainable disposal methods helps companies achieve their environmental goals and reduces the ecological footprint associated with waste (Xie, 2019).

Recycling is a fundamental component of reverse logistics, focusing on the recovery and reuse of

materials from returned products. Effective recycling practices involve sorting, processing, and repurposing materials to reduce the need for new raw materials and lower overall waste generation. By prioritizing recycling, companies can conserve natural resources, reduce energy consumption, and lower greenhouse gas emissions, contributing to broader sustainability objectives (Sarkis & Zhu, 2017).

While green disposal practices and recycling offer significant benefits, such as conserving resources and reducing emissions, implementing these practices presents challenges. Ensuring that waste is disposed of sustainably can be complicated by varying local regulations and available disposal methods (Malhotra, 2023). Establishing efficient waste management systems, particularly in regions with limited infrastructure, requires substantial investment and coordination among stakeholders (Sarkis & Zhu, 2017).

Moreover, managing zero-waste returns operations involves complexities related to handling products of varying conditions and destinations (Rashid et al., 2017). Coordinating reverse logistics activities with multiple stakeholders, including suppliers and third-party logistics providers, demands effective communication and collaboration (Fernandez et al., 2021). Ensuring proper recycling and sustainable disposal while adhering to regulatory requirements adds further complexity to reverse logistics operations (Úbeda et al., 2020).

In conclusion, reverse logistics significantly contributes to supply chain sustainability and efficiency through practices such as zero-waste returns operations, sustainable disposal methods, and recycling. While these practices offer substantial environmental and economic benefits, addressing challenges related to process complexity and stakeholder coordination is crucial for effective implementation.

Logistics Innovation

Logistics Innovation is pivotal for enhancing operational efficiency and sustainability in supply chain management. It involves the adoption of advanced technologies and practices that drive improvements across logistics processes. This includes integrating digital solutions, renewable energy sources, and cutting-edge transportation technologies to optimize performance and reduce environmental impact.

Paperless Documentation Systems represent a significant advancement in logistics by digitizing all documentation processes. This approach eliminates the need for physical paperwork, reducing paper consumption and associated waste. By transitioning to electronic documentation, motor dealerships in Nairobi can streamline their operations, improve accuracy in order processing and inventory management, and enhance communication with suppliers and customers. The reduction in paper use not only contributes to environmental sustainability but also improves overall operational efficiency (Govindan, K., 2022).

Solar-Powered Automated Warehousing involves the integration of solar energy systems with automated warehousing solutions. By powering warehouses with solar energy, motor dealerships can significantly reduce their reliance on fossil fuels and lower carbon emissions. Automated warehousing technologies, such as robotic systems and advanced inventory management solutions, further enhance efficiency by optimizing storage and retrieval processes. Combining solar power with automation not only lowers operational costs but also supports broader climate change mitigation efforts (Newman, J., 2023).

Electric Vehicle Technology focuses on incorporating electric vehicles (EVs) into transportation fleets. By adopting EVs, motor dealerships can reduce their dependence on traditional fossil fuels and minimize greenhouse gas emissions associated with logistics operations. Electric vehicles offer cleaner, more sustainable alternatives for transporting goods, which helps decrease the carbon footprint of supply chains and contributes to cleaner urban air quality (Smith, L., 2021).

Incorporating these innovative practices into logistics operations provides multiple benefits. Paperless Documentation Systems streamline processes and reduce waste, Solar-Powered Automated Warehousing enhances energy efficiency and operational effectiveness, and Electric Vehicle Technology promotes sustainable transportation solutions. Together, these advancements support environmental sustainability and improve overall performance in the supply chain.

However, implementing these innovations can present challenges. Transitioning to paperless systems requires investment in digital infrastructure and training, while solar-powered warehousing involves initial costs for installation and integration. Adopting electric vehicle technology necessitates the development of charging infrastructure and potential adjustments to fleet management practices. Addressing these challenges effectively is crucial for realizing the full benefits of logistics innovation.

In conclusion, leveraging Paperless Documentation Systems, Solar-Powered Automated Warehousing, and Electric Vehicle Technology enables motor dealerships to enhance their operational efficiency and reduce environmental impact. Embracing these innovations supports sustainability goals and positions dealerships for long-term success in an evolving business environment.

Performance of Kenya Motor Dealerships

The performance of Kenya Motor Dealerships is evaluated based on several key indicators, including lead time, inventory turnover, and capacity utilization. These metrics are crucial for assessing the efficiency, productivity, and profitability of motor dealerships in Kenya.

Lead time refers to the time taken from the placement of an order to its receipt or delivery. For Kenya Motor Dealerships, reducing lead time is essential for improving customersatisfaction, as shorter lead times mean quicker delivery of vehicles and parts to customers. Increased sales and repeat business may result from this. Additionally, shorter lead times enable dealerships to respond more effectively to changes in market demand, ensuring that they can meet customer needs in a timely manner. By implementing lean supply chain practices and efficient procurement strategies, such as procurement innovation, motor dealerships can reduce lead times and enhance their overall performance, Lee & Rha, (2016).

Inventory turnover is a measure of how quickly a dealership sells its inventory within a specific period. Effective inventory management and sales performance are indicated by a high inventory turnover ratio. For Kenya Motor Dealerships, maintaining a high inventory turnover is crucial for maximizing profitability and minimizing carrying costs associated with excess inventory. By implementing effective procurement and inventory management practices, such as lean supply and reverse logistics, dealerships can optimize inventory turnover rates. This involves accurately forecasting demand, managing stock levels, and reducing excess inventory through efficient reverse logistics processes, Sarpong & Oppong (2023)

Capacity utilization measures the extent to which an enterprise's production or service capacity is being utilized, Cruz & Cheprasov, (2023). High capacity utilization indicates efficient use of resources and can lead to improved profitability. For Kenya Motor Dealerships, maximizing capacity utilization is essential for optimizing operational efficiency and reducing costs. By ensuring that production facilities, service centers, and workforce are effectively utilized, dealerships can minimize idle capacity and enhance productivity. This may involve implementing lean practices to streamline processes, investing in technology to improve workflow efficiency, and adopting sustainable procurement practices to minimize waste and resource consumption, Sarkis & Zhu, (2017). Lead time, inventory turnover, and capacity utilization are key performance indicators for Kenya Motor Dealerships, reflecting their efficiency, productivity, and profitability. By addressing these metrics and implementing relevant strategies such as lean supply, recycling, procurement innovation, and reverse logistics, motor dealerships can enhance their overall performance and competitive advantage in the Kenyan market.

Empirical Review

Reverse Logistics and Firm Performance

A study by Ravi & Shankar 2017, aims to evaluate the interaction among the primary determinants of reverse logistics encountered in automobile sectors. Interpretive structural modeling (ISM) has been utilized in this study to comprehend the interactions between the reverse logistics variables that have been uncovered. One benefit of using the ISM methodology is that variables can be grouped based on how dependent and driven they are. Automakers are required by law to take

accountability for the goods they manufacture during their entire life cycle. This includes gathering and recycling products, cutting back on waste production, using more recycled materials, etc. For instance, manufacturers were required under the End-of-Life Vehicle Directive to retrieve their vehicles and dispose of them properly after their useful lives. According to this study, regulation has a strong driving force behind its appearance at the bottom of the ISM model, which influences other variables. Top management faces a major obstacle in the form of cash constraints when it comes to launching reverse logistics projects.

Logistics Innovation and Firm Performance

A study on how logistics innovation influences the relationship between innovation capabilities and business performance was conducted by Zimmermann et al. in 2020. This report aimed to investigate the effects of company performance on the fit between logistics (SC) strategy and innovation capabilities. A theoretical model based on the resource-based view was tested empirically using a sample of 329 Brazilian and Portuguese enterprises. The theories are tested via studies of linear and hierarchical regression. They scientifically examined and explored the various combinations of traditional and innovative logistics techniques, as well as core and supplementary innovation skills. Data show that company performance is positively impacted by both core and supplemental innovation capabilities, and that the connection between innovation capabilities and business performance is moderated by logistics strategies. The analysis also demonstrates that the best chances for enhancing company performance are provided by combining innovative logistics strategies with additional innovation capabilities.

The findings of this research may aid managers in selecting the best logistics approach, hence enhancing the influence of innovative capabilities on business success. This research adds to the body of knowledge regarding the effects on business performance of implementing various logistics strategies and innovation capabilities.

RESEARCH METHODOLOGY

A descriptive research design was used for this study. The study focused on Kenya's automotive dealership participants. The Kenya Motor Industry Association (2022) listed over 266 dealerships, of which 32 were major players that were well-known and established companies with strong internal structures both locally and internationally. Therefore, a total of 160 managers participated in the study. The purposive sampling approach was used in the study. Yamane (1967) formula was used to calculate the sample. Data for the study was gathered via a closed and open-ended questionnaire. Data entry and coding were done using SPSS version 28. To produce descriptive and inferential statistics, data were analyzed. Descriptive statistics included frequency, percentage, and mean. Inferential statistics included correlation and regression. The regression equation was

RESEARCH FINDINGS AND DISCUSSIONS

The study initially selected a sample of 160 respondents, with 16 designated for the pilot study, resulting in a remaining sample of 144. Of the 144 questionnaires distributed, 125 were returned, achieving a response rate of 86.8%. As per Mugenda and Mugenda (2023), a response rate of 50% is deemed sufficient for analysis and reporting, 60% is considered good, and 70% or higher is regarded as excellent. Consequently, the 86.8% response rate was considered excellent for further analysis and reporting.

Descriptive Statistics

This section outlines the study's findings based on Likert scale questions, where respondents indicated their level of agreement or disagreement with statements related to the effect of green procurement practices on the performance of Kenyan motor dealerships in Nairobi City. A 5-point Likert scale was employed, with the scale ranging from 1 (strongly disagree) to 5 (strongly agree). The results were interpreted using mean values: a mean of 1-1.4 signified strong disagreement, 1.5-2.4 indicated disagreement, 2.5-3.4 represented neutrality, 3.5-4.4 reflected agreement, and 4.5-5 denoted strong agreement. Additionally, a standard deviation above 1.5 indicated a greater variation in responses

among the participants.

Reverse Logistics

The second objective of the study was to examine the effects of reverse logistics on performance of Kenya Motor Dealerships in Nairobi County. Respondents rated their agreement with statements on Reverse Logistics. The findings are summarized in Table 1.

Table 1: Descriptive Statistics for Reverse Logistics

Statements	Mean	Std. Dev.
Our dealership effectively implements Zero-Waste Returns Operations to minimize waste from product returns	3.884	0.842
Our recall programs and procedures focus on Sustainable Disposal Methods for handling product recalls.	3.771	0.862
Our disposal methods adhere to environmentally friendly practices and are compliant with relevant regulations.	3.813	0.880
We collaborate with recycling companies to ensure Effective Recycling of returned products and packaging	3.830	0.865
We monitor and evaluate the Sustainability Impact of our returns and recall processes.	3.737	0.888
Aggregate Score	**3.810**	**0.883**

The findings show that the respondents agreed on average that their dealerships effectively implement Zero-Waste Returns Operations to minimize waste from product returns. (M= 3.884, SD= 0.842); that their recall programs and procedures focus on Sustainable Disposal Methods for handling product recalls (M= 3.771, SD= 0.862); and that their disposal methods adhere to environmentally friendly practices and are compliant with relevant regulations. (M= 3.813, SD= 0.880). Respondents also agreed that they collaborate with recycling companies to ensure Effective Recycling of returned products and packaging. (M= 3.830, SD= 0.865); that they monitor and evaluate the Sustainability Impact of our returns and recall processes (M= 3.737, SD= 0.888).

The results indicate that respondents generally agreed that Reverse Logistics practices have a positive influence on motor dealership performance, particularly in terms of effectively implementing Zero-Waste Returns Operations to minimize waste from product returns (M = 3.884, SD = 0.842). The findings from this study align well with existing literature on reverse logistics and its impact on sustainability and operational performance. Respondents agreed that their dealership effectively implements Zero-Waste Returns Operations to minimize waste from product returns, with a mean score of 3.884 (SD = 0.842). This finding is consistent with the research of Julianelli et al. (2020), who emphasize the importance of minimizing waste through effective returns management as a crucial element of sustainable supply chains. Their emphasis on zero-waste strategies mirrors the high level of commitment observed in this study. Similarly, the focus on Sustainable Disposal Methods in recall programs and procedures, as indicated by a mean score of (3.771 SD = 0.862), aligns with the work of Xie (2019) and Sarkis & Zhu (2017). These studies highlight the necessity of environmentally responsible disposal practices for reducing the ecological footprint of supply chains. The respondents' focus on sustainable disposal methods underscores their adherence to these established green practices. The study also found that respondents agreed their disposal methods adhere to environmentally friendly practices and comply with relevant regulations (M = 3.813, SD = 0.880). This finding supports the work of Malhotra (2023) and Úbeda et al. (2020), who discuss the importance of regulatory compliance and green disposal techniques. The adherence to these practices reflects a strong commitment to meeting environmental standards. Furthermore, the practice of collaborating with recycling companies to ensure Effective Recycling (M = 3.830, SD = 0.865) is supported by Fernandez et al. (2021) and Rashid et al. (2017), who emphasize the benefits of integrating recycling efforts into reverse logistics. This collaboration aligns with the principles of the circular economy, aiming to maximize the efficiency of recycling processes and reduce environmental impact. Finally, the monitoring and evaluation of the Sustainability Impact of returns and recall processes (M = 3.737, SD

= 0.888) reflect the recommendations of Govindan (2022) and Bozorgi-Amiri (2020), who advocate for continuous assessment to drive improvements in sustainability practices. The proactive approach observed in this study highlights the importance of ongoing evaluation to enhance environmental performance.

Overall, the study's findings demonstrate a positive influence of reverse logistics practices on motor dealership performance, particularly through effective implementation of zero-waste returns operations. This alignment with existing literature underscores the commitment to sustainable reverse logistics strategies and supports the broader goals of environmental sustainability and operational efficiency.

Logistics Innovation

The fourth objective of the study was to establish the benefit of Logistics Innovation on the performance of Kenya Motor Dealerships in Nairobi County. Respondents rated their agreement with statements on Logistics Innovation. The findings are summarized in Table 2.

Table 2: Descriptive Statistics for Logistics Innovation

Statements	Mean	Std. Dev.
We utilize e-logistics systems to improve our logistics operations	3.650	0.741
Our organization invests in solar energy systems to enhance operational sustainability and reduce reliance on conventional energy sources	3.615	0.766
We optimize our transportation routes to improve fuel efficiency and reduce emissions	3.462	0.701
Our fleet management includes vehicles that utilize sustainable fuels or technologies.	3.612	0.670
We regularly assess and update our fleet management practices to enhance environmental sustainability.	3.632	0.761
Aggregate Score	**3.594**	**0.728**

The findings show that respondents generally agreed on their implementation of logistics innovation practices. Specifically, respondents reported utilizing e-logistics systems to improve their logistics operations, with a mean score of 3.650 (SD = 0.741). This aligns with McKinnon (2018), who emphasized that e-logistics systems are crucial for streamlining operations, reducing costs, and enhancing overall supply chain efficiency. According to McKinnon, businesses that integrate e-logistics often benefit from improved real-time tracking and more efficient inventory management, reflecting the positive sentiment of the respondents in this study.

Respondents also agreed that their organization invests in solar energy systems to enhance operational sustainability and reduce reliance on conventional energy sources, with a mean score of 3.615 (SD = 0.766). This finding is consistent with Goldsby and Zinn (2016), who highlighted the benefits of adopting renewable energy technologies in logistics. Their research indicates that leveraging solar energy can significantly lower operational costs and minimize environmental impact, supporting the study's results on operational sustainability through solar energy investments.

Additionally, respondents reported that they optimize their transportation routes to improve fuel efficiency and reduce emissions, with a mean score of 3.462 (SD = 0.701). This practice aligns with industry trends aimed at reducing carbon footprints and improving environmental sustainability through better route planning.Respondents also agreed that their fleet management includes vehicles that utilize sustainable fuels or technologies (M = 3.612, SD = 0.670), and that they regularly assess and update their fleet management practices to enhance environmental sustainability (M = 3.632, SD = 0.761). These practices support the broader goal of minimizing environmental impact and are indicative of ongoing efforts to integrate more sustainable technologies and methods in fleet management.

Overall, the results indicate that respondents believe logistics innovation positively influences the performance of motor dealerships, with the highest agreement on the use of e-logistics systems (M =

3.650, SD = 0.741). This underscores the importance of integrating advanced logistics technologies and sustainable practices to enhance operational efficiency and environmental performance.

Performance of Motor Dealerships

The study's main objective is to determine the effect of green procurement practices on the performance of Kenyan motor dealerships in Nairobi City. Respondents rated their agreement with statements on the Performance of Motor Dealerships. The findings are summarized in Table 3.

Table 3: Descriptive Statistics for Motor Dealerships Performance

Statements	Mean	Std. Dev.
Green procurement practices has improved lead time in our dealership	3.717	0.750
Green procurement practices has improved Capacity utilization in our dealership	3.688	0.758
Green procurement practices has improved inventory turnover in our dealership	3.675	0.771
Green procurement practices have enhanced supplier reliability and delivery performance in our dealership	3.908	0.780
Green procurement practices have positively impacted our cost efficiency and overall profitability.	3.735	0.755
Aggregate Score	**3.745**	**0.763**

The findings showed that the respondents agreed on average that Green procurement practices have improved lead time in their dealerships (M= 3.717, SD= 0.750); that Green procurement practices have improved Capacity utilization in their dealerships (M= 3.688, SD= 0.758); and that Green procurement practices have improved inventory turnover in their dealerships (M= 3.675, SD= 0.771). Respondents also agreed that Green procurement practices have enhanced supplier reliability and delivery performance in their dealerships (M= 3.908, SD= 0.780); that Green procurement practices have positively impacted their cost efficiency and overall profitability. (M= 3.735, SD= 0.755);

The results indicate that respondents generally agreed that Green Procurement practices positively influence the performance of motor dealerships, with the highest mean score related to enhanced supplier reliability and delivery performance (M = 3.908, SD = 0.780). This finding aligns with the research by Golicic and Davis (2012), which demonstrated that integrating green procurement practices can lead to improved supplier relationships and better delivery performance. Their study found that firms that prioritize sustainability often experience stronger partnerships with suppliers, supporting the positive view expressed by respondents in your study. Similarly, the improvement in lead time (M = 3.717, SD = 0.750) and inventory turnover (M = 3.675, SD = 0.771) due to green procurement practices reflects the conclusions of Carter and Rogers (2008), who found that sustainable procurement practices can enhance operational efficiency by optimizing supply chain processes. Their research indicated that green procurement can contribute to reduce lead times and improved inventory management, resonating with the findings in your study. The positive impact of green procurement practices on dealership performance, particularly in enhancing supplier reliability and delivery performance is supported by prior research. Golicic and Davis (2012) highlighted how green procurement improves supplier relationships, which aligns with your study's findings. Additionally, Carter and Rogers (2008) emphasized that green procurement practices lead to more efficient operations, reflecting the improvements in lead time and inventory turnover observed in your study. The overall positive effects of green procurement on cost efficiency and profitability (M = 3.735, SD = 0.755) are consistent with the findings of Klassen and McLaughlin (1996), who showed that green practices can lead to cost savings and enhanced profitability by reducing waste and improving process efficiency. These studies collectively support the view that green procurement practices contribute significantly to the improved performance of motor dealerships.

Correlation Analysis

Pearson correlation was used to measure the strength and direction of the linear relationship between the variables. Pearson correlation is a statistical measure that quantifies the strength and direction of the linear relationship between two variables. It ranges from -1 to +1, where: +1 indicates a perfect

positive linear relationship (as one variable increases, the other variable increases proportionally). -1 indicates a perfect negative linear relationship (as one variable increases, the other variable decreases proportionally). 0 indicates no linear relationship. The correlation coefficient is denoted by "r", and it can help understand how two variables are related to each other. To interpret the strength of the relationship between two variables, the correlation coefficient "r" is categorized into different ranges.

Table 4: Correlation Analysis

		Performance	Reverse Logistics	Logistics Innovation
Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	125		
Reverse Logistics	Pearson Correlation	.773**	1	
	Sig. (2-tailed)	.000		
	N	125	125	
Logistics Innovation	Pearson Correlation	.782**	.476	1
	Sig. (2-tailed)	.000	.089	
	N	125	125	125

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

Reverse Logistics and Performance. Correlation: r=0.773, Significance: p<0.001: The strong positive correlation suggests that effective Reverse Logistics practices positively impact performance. Reverse Logistics involves the management of product returns, recycling, and disposal processes. By efficiently handling these activities, organizations can recover value, reduce costs, and enhance overall performance. This result aligns with research by Rogers and Tibben-Lembke (2001), who noted that well-managed reverse logistics can lead to significant improvements in operational efficiency and customer satisfaction.

Logistics Innovation and Performance. Correlation: r=0.782, Significance: p<0.001: The strong positive correlation suggests that Logistics Innovation has a significant impact on performance. Innovations in logistics, such as advanced technologies and novel strategies, improve efficiency, accuracy, and speed in supply chain operations. This correlation indicates that adopting innovative logistics practices leads to better performance outcomes. This supports findings by Vickery et al. (2013), who demonstrated that logistics innovations are crucial for improving operational performance and gaining a competitive edge in the market.

Multiple Regression Analysis

Multiple regression models were fitted to the data to determine how the predictor variables affect the response variable. This study used a multiple regression model to examine the impact of green procurement practices on performance of motor dealerships in Nairobi city county, Kenya.

Beta Coefficients of the Study Variables

The beta values were used to fit the regression equation and answer the research questions.

Table 5: Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	0.834	0.111		7.443	.000
Reverse Logistics	0.337	0.081	0.201	3.672	.005
Logistics Innovation	0.384	0.098	0.356	4.327	.000

From the findings, the following regression equation was fitted:

$Y = 0.834 + 0.337 X_1 + 0.384 X_2$

Where: Y = Performance of the motor dealerships in Nairobi City County, Kenya.

X1 = Reverse Logistics

X2 = Logistics Innovation

The positive and significant beta coefficient for Reverse Logistics (B = 0.337, p < 0.03) shows that effectively employing reverse logistics contributes significantly to firm performance. This finding is supported by Kumar and Shankar (2022), who demonstrated that well-implemented reverse logistics practices, including efficient returns management and recycling processes, positively influence operational efficiency and overall performance. Effective reverse logistics ensures that returned products and materials are managed systematically, leading to cost savings, enhanced sustainability, and improved firm performance.

The positive and significant beta coefficient for Logistics Innovation (B = 0.384, p < 0.05) indicates that Logistics Innovation has a constructive impact on the performance of motor dealerships in Nairobi County. This finding is consistent with the research presented in the study, "Innovation in Logistics and Its Impact on Business Performance: Evidence from the Automotive Industry" by M. A. Oliveira, A. L. de Oliveira, and R. R. de Souza (2018). In their study, Oliveira and colleagues focus on the automotive sector, analyzing how various logistics innovations—such as advanced technologies and improved processes—positively influence business performance. Their research provides empirical evidence that supports the role of logistics innovation in enhancing operational efficiency and overall dealership performance. This aligns with the observed impact of logistics innovation on motor dealerships in Nairobi County, reinforcing the value of implementing innovative logistics practices to boost business outcomes.

Conclusions

The analysis of feedback revealed that reverse logistics practices are crucial for optimizing capacity utilization and lead times. Respondents emphasized that implementing Zero-Waste Returns Operations effectively minimizes waste from product returns, which is vital for optimizing warehouse space and enhancing capacity utilization. Additionally, focusing on Sustainable Disposal Methods and maintaining robust Recycling partnerships significantly contribute to efficient resource management and environmental compliance. These practices help mitigate supply chain disruptions and support a streamlined inventory system. Consequently, effective reverse logistics not only ensures better management of returns and recalls but also leads to more reliable lead times and improved capacity utilization, thereby enhancing overall operational efficiency.

The data analysis highlighted that logistics innovation substantially impacts lead time, inventory turnover, and capacity utilization. Respondents emphasized that the implementation of e-logistics systems significantly improves operational efficiency by enabling real-time tracking and more effective inventory management, leading to reduced lead times. Investments in solar energy systems and sustainable fuels contribute to operational sustainability and help in reducing reliance on conventional energy sources. Furthermore, regular evaluations and updates to fleet management practices are crucial for optimizing capacity utilization and ensuring efficient fleet performance. The findings indicate that these innovations collectively enhance performance across all key metrics: lead time, inventory turnover, and capacity utilization.

Recommendations

Reverse Logistics

Motor dealerships should focus on refining their reverse logistics practices with a strong emphasis on Zero-Waste Returns Operations, Sustainable Disposal Methods, and Effective Recycling. To minimize environmental impact and improve operational efficiency, dealerships should implement robust systems for managing returns and recalls that align with zero-waste principles. This involves ensuring that all returned products are processed in a manner that maximizes reuse or recycling and minimizes waste.

Additionally, dealerships should adopt sustainable disposal methods for handling returned products and recall items. This includes using environmentally friendly and compliant disposal techniques that adhere to regulatory standards. Partnering with specialized recycling companies can further enhance these practices, ensuring that materials are effectively recycled and contribute to a circular economy.

Tracking the sustainability impact of returns and recalls is also crucial. Dealerships should implement mechanisms to monitor and evaluate how their reverse logistics activities affect their overall environmental footprint. Regular reviews and updates of these practices will help maintain their effectiveness and ensure they align with sustainability goals. By focusing on these elements, motor dealerships can improve their reverse logistics operations, contribute to environmental sustainability, and achieve better regulatory compliance.

Logistics Innovation

To enhance their operational performance and sustainability, motor dealerships should focus on adopting cutting-edge logistics innovations. First and foremost, Paperless Documentation Systems should be implemented to streamline logistics operations and reduce paper waste. E-logistics systems can further optimize this process by enabling real-time tracking and improving inventory management, which is essential for reducing lead times and enhancing overall efficiency.

Investment in Solar-Powered Automated Warehousing is another key recommendation. Utilizing solar energy systems to power warehousing operations can significantly lower reliance on conventional energy sources, thereby reducing operational costs and minimizing environmental impact. This sustainable approach supports long-term operational efficiency and aligns with broader environmental goals.

Additionally, incorporating Electric Vehicle Technology into fleet management practices is crucial. Electric vehicles (EVs) not only contribute to reducing emissions but also align with sustainable fuel usage, enhancing the overall sustainability of the dealership's operations. Regular assessments and updates to fleet management practices will ensure that these technologies are effectively utilized, optimizing capacity and operational efficiency.

By integrating these innovations, dealerships can significantly improve their performance metrics, including lead time, inventory turnover, and capacity utilization, while aligning with environmental sustainability objectives.

Suggestions for Further Research

Future research should explore the impact of these practices in different regions or sectors to validate the findings across various contexts. Investigating how market trends and consumer preferences influence the relationship between logistics practices and dealership performance could provide additional insights. Qualitative studies could offer a deeper understanding of the challenges and benefits experienced by dealerships in implementing these practices. Additionally, examining the role of leadership styles, organizational culture, and other factors in shaping the effectiveness of logistics practices could contribute to a more comprehensive understanding of their impact on performance. These areas of research could help optimize logistics practices for improved dealership performance.

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