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Practices and Effectiveness of Supply Chain Management of MOHA Soft Drink Company, Mekelle, Ethiopia

A RESEARCH THESIS SUBMITTED TO THE DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT IN PARTIAL FULFILLEMENTS OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

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Declaration

I hereby declare that this thesis entitled "Practices and Effectiveness of Supply Chain Management of MOHA Soft Drink Company, Mekelle, Ethiopia" has been carried out by me under the guidance and supervision of HAILAY GEBRETINSAE BEYENE (PhD). The thesis is original and has not been submitted for the award Of MSC, degree from Mekelle University, and to any other university or college. Besides, all sources of relevant materials taken from books and articles have been duly acknowledged.

Researcher's name **date** **signature**

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Certificate

This is to certify that this thesis titled “Practices and Effectiveness of Supply Chain Management of MOHA Soft Drink Company, Mekelle, Ethiopia", submitted to Mekelle University for the award of the Degree of MSc in Logistics and supply chain management and is a record of Valuable research work carried out by **GEBRETENSAY BELAY AMARE**, under our guidance and supervision. Therefore, to the best of our knowledge, we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree or diploma.

Main Advisor’s Name	Date	Signature
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Co-Advisor’s Name	Date	Signature
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Abstract

In this study, the Mekelle plant of MOHA Soft Drink Company's supply chain management (SCM) procedures, efficacy, and difficulties are examined. Supply chain integration, transportation and distribution, inventory management, and procurement are all thoroughly evaluated in this study by combining quantitative and qualitative data using a mixed-methods approach and a descriptive research design. Structured questionnaires, semi-structured interviews, and document reviews were used to gather data. Techniques for stratified random and purposive sampling made sure that every department had equal representation and expert knowledge. The findings indicate that, while MOHA demonstrates notable strengths in areas such as forecasting accuracy, delivery dependability, and the establishment of strong supplier partnerships, persistent challenges remains in strategic sourcing particularly limited supplier diversification and reliance on short-term agreements. Furthermore, flaws in communication, evident in uneven information flow and limited interdepartmental coordination, as well as shortcomings in inventory management, including inadequate stock monitoring and recurrent delivery delays, continue to impair overall supply chain efficiency. Operational effectiveness is hampered by issues including overstocking, the accumulation of outmoded material, ineffective vehicle maintenance, and a lack of real-time data consumption. Three key elements that influence the company's SCM success were found through factor analysis: Collaboration & Feedback, Communication & Information Sharing, and Partnership & Trust. Furthermore, supply chain resilience is threatened by internal inefficiencies as well as external interruptions like political unrest and infrastructure constraints. According to the study's findings, MOHA has to increase worker training, establish sourcing regulations, strengthen digital integration, and implement proactive inventory and logistics tactics. Achieving long-term supply chain sustainability, cutting operational waste, and improving agility all depend on these innovations.

***Key Terms**: Supply Chain Management, Procurement Practices, Inventory Control, Transportation and Distribution, MOHA Soft Drink Company, Mekelle.*

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Acronyms

CRM ……..Customer Relationship Management

EABC ……....East African Beverage Sector

FMCG ……Fast-Moving Consumer Goods

PCI……. Pepsi Cola International

ROI …….Return On Investment

SCM ……...supply chain management

SCME …….Supply Chain Management Effectiveness

SCOR model……Supply Chain Operations Reference model

SCOR……...Supply Chain Operations Reference

SPSS…….. Statistical Package for Social Sciences

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CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Since the 1990s, the concept of supply chain planning has been more significant due to heightened worldwide rivalry in delivering items or services at the appropriate location and time. Numerous sectors have endeavored to adopt their own iterations of supply chain management (Chopra & Meindl, 2021). Is a crucial driver of organizational performance, as demonstrated by early adopters such as Shebeshe and Sharma (2024) found that sustainable SCM methods considerably boost competitive advantage and firm performance in Ethiopian manufacturing. Li et al. (2024) similarly show that optimizing SCM procedures provides measurable competitive gains. Moreover, procurement sustainability connected to reverse logistics has been found to serve environmental, economic, and social goals (Letunovska et al., 2023). Performance measurement frameworks—such as those utilizing SCOR or Balanced Scorecard approaches—help organizations align SCM efforts with strategic objectives and improve both operational and financial outcomes (El Garaihy, 2021; Pejić Bach et al., 2023).

Modern supply chain management incorporates tactics including green logistics, reverse logistics, offshore management, and inventory control. These technologies enable firms to optimize supply and demand models while maintaining a balance between forward operations, reverse distribution, and knowledge symmetry across the supply chain network (Srivastava, 2007). Green logistics, for instance, has developed as a prominent trend in sustainable supply chain management, concentrating on incorporating eco-friendly techniques into logistics processes. This involves adopting energy-efficient transportation modes, optimizing routes to reduce emissions, and applying sustainable warehousing practices (Letunovska et al., 2023; Zhang & Wang, 2024). Such efforts not only contribute to environmental sustainability but also boost operational efficiency and cost-effectiveness. Historically seen as a cost burden, logistics and supply chain management have transformed into strategic assets that promote organizational resilience and market competitiveness (Garry, 2012; Dossou et al., 2024). This paradigm change has pushed organizations to streamline operations by eliminating non-essential processes, hence enhancing efficiency and production.

Businesses around the world understand the importance of supply chain strategy as a metric for success, and one important performance indicator is global market share (Salas-Navarro & García-Sánchez, 2024). Enhancing supply chain efficiency and alignment with corporate goals

requires the implementation of performance assessment frameworks (El-Garaihy, 2021). According to recent research, it is crucial to assess supply chain performance using thorough frameworks that take into account a number of factors, such as sustainability, agility, and responsiveness (Pejić Bach et al., 2023).

These frameworks enable firms in identifying areas for development, defining standards, and aligning their supply chain strategies with overall business goals. By using such performance assessment systems, firms can strengthen their supply chain skills, achieve operational excellence, and maintain a competitive edge in the global market (Shebeshe & Sharma, 2024). Firms that successfully combine internal and external stakeholder viewpoints are more likely to attain optimum results.

MOHA Soft Drinks Industry S.C. has a franchise agreement with Pepsi Cola Company in Ethiopia. It is one of the MIDROC sisters Company. MOHA Soft Drinks Industry S.C was established in accordance with the commercial code of Ethiopia following the acquisition of the four plants which are Teklehaimanot plant in Addis Ababa, Nifas Silk Plant in Addis Ababa, Gondar plant, and Dessie Plant in January 1996 at a total purchase price of Birr 111.8 million (USD 17.5 million) through a bid floated by the Ethiopian privatization agency. The company is a sole producer of Pepsi cola product in the country under the franchise agreement with Pepsi Cola International (PCI). Including its Mekele plant, was established on May 15, 1996. It was acquired from the Ethiopian Privatization Agency at that time. The company manufactures, buys, sells, bottles, and distributes non-alcoholic beverages, mineral and aerated waters, and their ingredients in Ethiopia and elsewhere (MSDC, 2020).

1.2 Statement of Problem

In today's global corporate the environment, efficient supply chain management (SCM) is crucial for guaranteeing operational efficiency, customer satisfaction, and overall organizational success. Considering the deployment of different SCM strategies such as effective supplier alliances, customer relationship management, and internal lean practices, MOHA Soft Drink Company Mekelle plant continues to confront considerable hurdles. These obstacles include logistical inefficiencies, supply chain interruptions, quality control concerns, and regulatory compliance barriers, which weaken its capacity to satisfy consumer requests maintain inconsistent product quality.

Previous studies have shown the potential of SCM methods to boost organizational performance. For example, Mekonnin (2017) investigated the link between SCM practices and organizational performance, stressing the crucial significance of strategic supplier alliances, customer relationship management, and information exchange. The data suggested that enhancing SCM processes might greatly boost performance outcomes. Additionally, Aderaw (2020) addressed the logistical issues encountered by firms in Sub-Saharan Africa, such as limited infrastructure and trade impediments, and stressed the potential of digitalization in boosting SCM efficiency via increased tracking systems and information flows. Furthermore, Tesfaye and Desta (2019) evaluated sustainable SCM methods in the area, emphasizing their economic, social, and environmental advantages while identifying hurdles and options for adaptations.

Despite these contributions, there is a paucity of thorough studies concentrating especially on the benefits, shortcomings, problems, and practices of SCM in the East African beverage sector. This information gap is especially visible in the context of the EABC Mekelle facility, where a thorough examination of its SCM procedures has yet to be done. Addressing this gap is critical for creating concrete ways to overcome current difficulties and use strengths to enhance organizational performance

Therefore, this research intends to investigate Supply Chain Management (SCM) encompasses the coordination and oversight of the entire flow of goods and services, from raw material procurement to final product delivery. Effective SCM aims to enhance operational efficiency, minimize costs, and ensure customer satisfaction by integrating key functions such as procurement, production, logistics, and reverse logistics. Standard SCM practices include strategic planning, supplier management, inventory control, and the adoption of digital and sustainable solutions to improve supply chain visibility and resilience. According to NetSuite (2024), best practices in SCM involve optimizing demand forecasting, supplier collaboration, and leveraging technology to enhance supply chain agility. In addition, this research expects to investigate the practices and effectiveness of supply chain management at the MOHA Soft Drink Company's Mekelle facility, with an emphasis on examining the practices and the effectiveness of the SCM.

1.3. Objective

1.3.1. General Objective

The general objective of this study is to analyze the practices and effectiveness of supply chain management (SCM) at MOHA's plant in Mekelle.

1.3.2. Specific objective

The specific objectives:

- ✓ To assess the effectiveness procurement practices MOHA Soft Drink Company Mekelle plant.
- ✓ To evaluate the effectiveness inventory management techniques used by the company.
- ✓ To examine the effectiveness transportation and distribution strategies of the company.
- ✓ To examine the backward (supplier-side) and forward (customer-side) linkages of the company.
- ✓ To identify challenges in supply chain management.

1.4. Research questions

1.4.1 General research question

What is the key supply chain management practices implemented at MOHA's Mekelle plant?

1.4.2 Specific research questions

1. How effective are the procurement practices of MOHA Soft Drink Mekelle plant Company?
2. How effective are the inventory management techniques used by the company?
3. What transportation and distribution strategies does the company implement? How effective are they?
4. How robust are the backward (supplier-side) and forward (customer-side) linkages of the company?
5. What challenges does the company face in supply chain management?

1.5 Scope of the study

This study attempted to analyze the methods and efficacy of supply chain management (SCM) at MOHA Soft Drink Company's Mekelle factory, with a special emphasis on the supply chain management (SCM) department. The investigation restricted its reach both geographically and functionally by eliminating other divisions or branches of the corporation outside the Mekelle facility. The purpose was to assess basic operating practices inside the SCM unit and to determine how these practices contributed to overall supply chain performance.

This research attempted to examine the methodology and effectiveness of SCM at MOHA Soft Drink Company's Mekelle facility, with specific attention on the SCM department. The study was confined in its scope geographically and operationally, omitting any divisions or branches of the business outside the Mekelle plant. The objective is to analyze core operational procedures inside the SCM unit and to establish how these practices have affected the overall performance of the supply chain.

The theoretical underpinning of the research was Supply Chain Management Theory, combining principles from the SCOR model (Supply Chain Operations Reference model), notably in the areas of Plan (information exchange), Deliver (customer interactions), and Source (supplier partnerships). The study also relied upon Lean Management Theory, notably in analyzing internal lean operations such as process optimization and waste reduction. Additionally, the evaluation of customer-centric activities was supported by Customer Relationship Management (CRM) Theory, while the assessment of communication flows inside the supply chain was directed by Information Sharing and Transparency Theory.

However, the research did not incorporate larger theoretical approaches such as systems theory, network theory, or institutional theory, which encompass significant inter-organizational and environmental interactions. Furthermore, behavioral and psychological theories connected to organizational culture or employee motivation, although possibly significant, were also not being brought into the study framework.

The research was concentrated on five important aspects considered to impact the success of supply chain management. These independent variables were included: strategic supplier alliances, customer relationship management, information exchange (rated for speed, accuracy,

and transparency), and internal lean practices. The effects of these practices was investigated in connection to the dependent variable, which is the overall efficacy of SCM. This was examined using measures such as supply consistency, customer happiness, and operational efficiency.

Nonetheless, the research did not account for some factors that, while potentially important, fall beyond its intended scope. These omitted variables were include external elements such as market dynamics, regulatory frameworks, and macroeconomic situations. In addition, internal HR-related concerns such as staff competence, leadership in the SCM sector, and employee training were not addressed. Technological aspects such as IT infrastructure, automation, and digital systems, despite their likely effect on information exchange and lean methods, were also not being studied explicitly within this research.

A descriptive and analytical study approach was utilized, incorporating both quantitative and qualitative data obtained from the SCM department. Data-gathering approaches included structured questionnaires, interviews with supply chain workers, and evaluations of pertinent documents. This research involved experimental, longitudinal, or econometric modelling methodologies.

The unit of study was the SCM department of MOHA's Mekelle site, and the anticipated respondents were to comprise supply chain managers, procurement officers, logistics workers, and maybe customer support people. Given the cross-sectional structure of the research, it captured habits and efficacy at a particular moment in time, rather than over a prolonged period.

The research concentrated on SCM practices throughout the most recent fiscal year, often encompassing a 12-month period previous to the time of data collection. It was not not include estimates regarding future supply chain changes beyond the study period, nor did it contain a historical review of patterns in SCM across several years.

1.6 Significance of the Study

This research was gave significant insights for the management of MOHA Soft Drink Company, notably for the Supply Chain Management (SCM) department, by enabling better informed and effective decision-making processes. It expanded the researcher's grasp of supply chain

management methods and their effect on organizational performance, delivering a greater comprehension of how procurement, inventory, transportation, and links affect efficiency. Furthermore, the study served as a basis for future research, either within the same domain or in adjacent domains, adding to the academic growth of SCM studies. The results not only supplement the current body of research on SCM in the East African setting but also give practical suggestions targeted at enhancing operational efficiency and sustainability in the beverage sector. Ultimately, the study integrated theoretical knowledge with real-world applications, enabling the MOHA Soft Drink Company and comparable firms to boost their supply chain performance in a competitive and developing market context.

1.7 Limitation of the Study

This research provides valuable insights into specific supply chain management (SCM) practices; however, several limitations must be acknowledged. Firstly, due to time and resource constraints, the study's sample did not encompass all participants within the supply chain, particularly upstream suppliers and downstream customers.

Consequently, the findings may not be representative of the entire supply chain ecosystem. Secondly, the study focused on a limited subset of SCM constructs, excluding critical dimensions such as risk management, visibility tools, stakeholder alignment, and technological integration. This narrow focus means the study does not capture the full complexity of SCM practices.

Lastly, the study's limited scope and sample size reduce the generalization of its conclusions to the broader supply chain context.

Future research should aim to include a broader cross-section of supply chain stakeholders, incorporate a wider range of SCM constructs, and address potential omitted variables to provide a more comprehensive understanding of SCM practices

1.8 Organization of the paper

The research paper is structured in classifying of the five chapters. Chapter one presents the background of the study and the company, statement of the problem, objective of the study, significance of the study and scope of the study. The second chapter deals with review of related theoretical literature; the third chapter deals with research methods and methodology. The fourth chapter presents the discussions and results from assessment of supply chain management and its relationship to organizational competitiveness. Finally, based on the analysis and interpretation, conclusions and recommendations were forwarded.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Theoretical view

2.1.1. Overview of Supply Chain Management

Supply Chain Management (SCM) is a complete method that integrates many corporate functions such as marketing, production, purchasing, transportation, finance, and human resources to satisfy consumer expectations efficiently and effectively. As Gattorna (2009) states, "All institutions have supply chains running through them, connecting a diverse range of human activities and needs," stressing the omnipresence and centrality of supply chains in organizational operations. SCM strives to organize and streamline these interconnected activities, transforming them into a unified process that offers value to both the firm and its consumers.

The SCM framework has three interrelated elements: business processes, management components, and the structure of the supply chain (Gupta & Sahay, 2007; Quayle, 2006). It understands that intra-organizational activities should not work in isolation but rather be part of a coordinated and integrated effort (Morash & Clinton, 1998). This integration is vital for creating genuine value, since supply chain stakeholders must interact, sharing costs, risks, and profits, with an emphasis on customer pleasure (Wilhelm, 2005).

A supply chain comprises all steps involved, directly or indirectly, in satisfying a consumer request, including manufacturers, suppliers, transporters, warehouses, retailers, and customers themselves (Chopra & Meindel, 2021). The evolution of SCM has been impacted by two main paths: purchasing and supply management, and transportation and logistics management (Tan et al., 1998; Bratić, 2011).

Logistics, a critical component of SCM, refers to the planning, implementation, and control of the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption to meet customer requirements (Rogers & Leuschner, 2004). Ensemru (2013) underlines that logistics is the operational part of the supply chain, ensuring the movement and storage of items in alignment with customer needs.

2.1.2 Theoretical Foundations: Resource-Based View and Transaction Cost Economics

To deepen the understanding of SCM methods, it is vital to investigate theoretical models that provide insights into organizational behavior and decision-making processes. Two major theories in this area are the Resource-Based View (RBV) and Transaction Cost Economics (TCE).

Resource-Based View (RBV): Barney (1991) developed the Resource-Based View (RBV), which holds that a company's valuable, rare, inimitable, and non-substitutable (VRIN) resources and talents are the basis of its long-term competitive advantage. RBV contends that companies may get exceptional performance in SCM by using internal resources including highly qualified employees, unique technology, and solid supplier connections. Businesses may improve their competitive position in the market by using these resources to create unique skills that are hard for rivals to imitate.

Transaction Cost Economics (TCE): Developed by Williamson (1981) after being first proposed by Coase (1937), TCE is concerned with the costs of economic transactions, specifically the costs of contract negotiation, monitoring, and enforcement. TCE is especially important in supply chain management (SCM) when businesses are choosing suppliers, governance frameworks, and outsourcing vs in-house manufacturing. The idea highlights that, after taking into account variables like asset specificity, uncertainty, and transaction frequency, businesses would choose the governance structure that minimizes transaction costs. Businesses may create supply chain partnerships that improve performance and decrease inefficiencies by using TCE.

Integrating RBV and TCE gives a complete foundation for understanding SCM methods. While RBV highlights the relevance of internal resources and skills, TCE focuses on the external transactional environment. Together, these ideas give significant views on how organizations may improve their supply chains by using internal strengths and managing external interactions efficiently.

2.2. Practices of Supply Chain Management

Supply chain management practices have been defined as a set of activities undertaken in an organization to promote effective management of its supply chain. Tan, Kannan, & Handfield

(2008) identify six aspects of SCM practice through factor analysis: supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity and JIT capability. According to Muhammad (2004) this variable refers to several activities or practices related to operational function of firms. It is used to measure the SCM adoption and its level practices. Related practices are divided into six dimensions namely strategic supplier partnership, customer relations practices, information sharing, information quality, lean system and postponement. In reviewing and consolidating the literature, five distinctive dimensions are selected for measuring SCM practice. The five constructs cover upstream (strategic supplier partnership) and downstream (customer relationship) sides of a supply chain, information flow across a supply chain (level of information sharing and quality of information sharing), and internal supply chain process (postponement).

2.2. 1.Customer Relationship

Customer relationship comprises the entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction (Tan, Kannan, & Handfield, 2008). Close customer relationship allows an organization to differentiate its product from competitors, sustain customer loyalty, and dramatically extend the value it provides to its customers. According to Lambert (2005) the management of customer relationships is widely recognized as an essential component of an organization because of the expected benefits likely to occur if done well and the likely detriments to arise if neglected, the determination of what exactly constitutes CRM and its implementation remains to be a prominent point of contention in CRM literature and in practice has proven to be nothing short of extreme. He further suggests that technology is a tool and to be successful, management must place its primary focus on the CRM process, the people and the procedures that make the technology effective. This is not to say that technology doesn't play an Effect in CRM or can't assist in its success. Actually, it had been observed that all customers do not contribute equally to the firm's success; hence the goal of every firm is to identify those customers who desire and deserve special treatment so that offerings can be tailored to meet their needs while achieving the firm's profit goals for the customer.

2.2.2 Strategic Supplier Partnership

Strategic supplier partnership: is defined as the long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits (Stuart, 2007). Strategic partnerships with suppliers enable organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. Suppliers participating early in the product design process can offer more cost-effective design choices, help select the best components and technologies, and help in design assessment (Tan et al, 2002). Strategically aligned organizations can work closely together and eliminate wasteful time and effort (Balsmeier & Voisin, 2006). An effective supplier partnership can be a critical component of a leading-edge supply chain (Noble, 2007). Raps (2005), claims that the key to success is an integrative view of the implementation process of strategy. Researchers have emphasized the strategic importance of integrating suppliers, manufacturers, and Customers. Christopher, (2003) stresses the importance of linking an innovative strategy to the companies vision and overall business strategy. Clients are shown to be key drivers of performance improvement and innovation and are the most significant factor in achieving integration in the supply chain.

2.2.3 Level of Information Sharing

Level of information sharing: information sharing has two aspects: quantity and quality. Both aspects are important for the practices of SCM and have been treated as independent constructs in the past supply chain management (Moberg, Cutler, Gross, & Speh, 2012. Level (quantity aspect) of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner. Supply chain partners who exchange information regularly are able to work as a single entity. Together, they can understand the needs of the end customer better and hence can respond to market change quicker.

2.2.4 Quality of Information Sharing

Quality of information sharing includes such aspects as the accuracy, timeliness, adequacy, and credibility of information exchanged. While information sharing is important, the significance of its impact on SCM depends on what information is shared, when and how it is shared, and with whom. It appears that there is a built in reluctance within organizations to give away more than minimal information since information disclosure is perceived as a loss of power. Given these

predispositions, ensuring the quality of the shared information becomes a critical aspect of effective SCM (Feldmann and Muller, 2003). Organizations need to view their information as a strategic asset and ensure that it flows with minimum delay and distortion. 2.1.7.5 Lean practices According to Lean Enterprise Institute (2009) the term lean was coined by Krafcik in the late 80`s, even though the philosophy came to the Western world`s attention in the early 80`s as a result of competition from Japan automobile industry which offered low prices and quality products. To precisely define lean is hard and it is likely that every company exercising lean will follow their own unique course (Lewis, 2000). It is the process of removing all of the wasted time and resources in the production process. Lean can be considered a philosophy, a work culture, a technique, a management concept, a value, a methodology or an ethos (Mark, Wilson and Ram, 2009).

Today, lean is evolving into a management approach that improves all the processes at each level of an organization (Womack et al., 1990; Liker, 1998). According to Bhasin and Butcher (2006) some of the common lean procurement methodologies are; Kaizen, Kanban systems and Supplier development. A long term philosophy, processes, people and right culture are essential to convert an organization into a lean enterprise (Liker, 2004; Henderson et al., 1999). Long term relationships with suppliers are important elements of lean supply (Handfield, 1993). According to Liker (1996); Lathin, (2001); Ferch, et al., (1998) today`s demand driven supply chains require lean procurement methods whose goals are: to eliminate waste in all procurement cycles, prevent shortages, reduce inventory investment, reduce procurement lead time and cost, increase inventory turnover and ensure customers satisfaction. These methods ensure greater efficiency and standardization of procedures.

2.2.5 Organizational Performance

Organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals (Yamin, 2009). The short-term objectives of SCM are primarily to increase productivity and reduce inventory and cycle time, while long-term objectives are to increase market share and profits for all members of the supply chain (Tan,

2008). Financial metrics have served as a tool for comparing organizations and evaluating an organizations behavior over time (Holmberg, 2000).

Any organizational initiative, including supply chain management, should ultimately lead to enhanced organizational performance. A number of prior studies have measured organizational performance using both financial and market criteria, including return on investment (ROI), market share, profit margin on sales, the growth of ROI, the growth of sales, the growth of market share, and overall competitive position represented by constructs like, Price/Cost. It is the ability of an organization to compete against major competitors based on low price and quality (Li, 2006). The ability of an organization to offer product quality and performance that creates higher value for customers' delivery dependability. It includes the ability of an organization to provide on time the type and volume of product required by customer(s) (Li et al, 2006).

2.3. Supply Chain Management Practices and Organization Performance

SCM practices impact not only overall organizational performance, but also competitive advantage of an organization. They are expected to improve an organizations competitive advantage through price/cost, quality, delivery dependability, time to market, and product innovation. Prior studies have indicated that the various components of SCM practices (such as strategic supplier partnership) have an impact on various aspects of competitive advantage (such as price/cost). For example, strategic supplier partnership can improve supplier performance, reduce time to market (Hanfield, 2007), and increase the level of customer responsiveness and satisfaction (power, 2001). Information sharing leads to high levels of supply chain integration by enabling organizations to make dependable delivery and introduce 18 products to the market quickly. Information sharing and information quality contribute positively to customer satisfaction and partnership quality (Li, 2009).

2.4.Empirical Findings

An increasing number of empirical studies underscore the substantial impact of efficient supply chain management (SCM) techniques on business performance, especially within the fast-moving consumer goods (FMCG) and beverage industries. Companies that use integrated supply

chain methods have demonstrable advantages throughout the world, such as lower costs, more reliable service, and happier customers (Chopra & Meindl, 2021; Ivanov & Dolgui, 2020). Jain et al. (2023) studied global beverage manufacturers and found that digital supply chain technologies like AI forecasting, ERP integration, and blockchain made the supply chain more visible, cut down on lead times, and made it easier to respond to changes in demand.

Numerous empirical investigations have been undertaken within the African environment. Kusi-Sarpong et al. (2022) evaluated sustainable supply chain innovations in Ghana, finding that procurement strategy, inventory optimisation, and supplier cooperation significantly enhanced performance. Mwaura and Namusonge (2021), in their study of manufacturing enterprises in Kenya, found that procurement and logistics coordination were strongly linked to the overall performance of supply chain management (SCM).

Closer to Ethiopia, Tadesse and Mekonnen (2021) evaluated SCM processes in Ethiopian FMCG enterprises and discovered deficiencies in procurement planning, storage systems, and transportation dependability. In the same way, Gebrehiwot et al. (2023) looked at bottling enterprises in northern Ethiopia and found that they had big operating delays because of weak backward connections and inventory systems that weren't good enough. These empirical data indicate that while knowledge of SCM methods is increasing in Ethiopia, implementation is still hampered by technology constraints, coordination challenges, and infrastructural deficiencies.

Despite several studies on SCM, some critical research gaps persist—particularly within the Ethiopian beverage sector. First, few studies evaluate the complete supply chain holistically. Most concentrate on either procurement, inventory, or transportation in isolation, without studying how these factors interact and influence total performance (Tadesse & Mekonnen, 2021; Gebrehiwot et al., 2023).

Second, minimal usage of theoretical models such as SCOR (Supply Chain Operations Reference) or Lean Supply Chain frameworks has been noticed in Ethiopian research. This makes it impossible to assess local practices to international norms (Ahi & Searcy, 2022). Third,

there is a lack of firm-specific case studies especially on major, well-established enterprises like MOHA Soft Drink Company despite its substantial position in Ethiopia's beverage industry.

Fourth, technology components of SCM (e.g., usage of ERP, automation, digital procurement tools) are seldom addressed in local research, despite though they are significant drivers of effectiveness in global supply chains (Ivanov & Dolgui, 2020). Finally, few research give actionable policy or management suggestions, limiting their practical value. These limitations underline the need for thorough research that assesses all main SCM components and uses global standards to measure supply chain performance in the Ethiopian setting.

One continuous trend across both local and international research is the favourable effect of well-managed procurement and logistics on supply chain performance. Studies from Kenya (Mwaura & Namusonge, 2021), Ghana (Asamoah et al., 2020), and India (Jain et al., 2023) demonstrate that supplier assessment, procurement planning, and effective distribution networks lead to enhanced customer service and cost savings. Another universal conclusion is the necessity of supplier relationships and supply chain integration. Both Gebrehiwot et al. (2023) and van der Vaart et al. (2020) underline that strong backward and forward links promote smoother information flow and response to market changes. Furthermore, most studies agree that inventory management is a chronic challenge with overstocking, under stocking, and outdated inventory regularly hurting operational efficiency.

Also, there is a widespread observation that supply chain difficulties are typically environmental and structural in developing nations, such as inadequate infrastructure, insufficient ICT systems, and uneven regulatory frameworks (Kusi-Sarpong et al., 2022; Tadesse & Mekonnen, 2021).

The most obvious distinction resides in technical preparedness and integration. International studies (e.g., Ivanov & Dolgui, 2020; Jain et al., 2023) stress the use of digital technologies, data analytics, and supply chain digitalisation, which have become routine in industrialised nations. In contrast, Ethiopian and larger African studies suggest low utilisation of integrated SCM systems,

with many enterprises still depending on manual inventory monitoring and rudimentary communication routes (Tadesse & Mekonnen, 2021).

Another variation is in supplier cooperation initiatives. While corporations in Europe and Asia generally engage in long-term partnerships and shared forecasting with suppliers (van der Vaart et al., 2020), Ethiopian organisations tend to function transactionally, with minimal trust and strategic alignment between parties (Gebrehiwot et al., 2023). Furthermore, governmental and institutional support for SCM is substantially higher in developed nations. Government incentives, infrastructure development, and business-enabling environments enable easier supply chain operations overseas, but Ethiopian enterprises typically experience delays owing to customs inefficiencies, road conditions, and policy uncertainty (Asamoah et al., 2020; Ahi & Searcy, 2022). In summary, while global best practices in SCM emphasize digital integration, supplier collaboration, and strategic alignment, Ethiopian firms including MOHA Soft Drink Company operate in a vastly different context characterized by infrastructural limitations and operational fragmentation. There is a clear need for more focused, company-specific studies in Ethiopia that benchmark SCM practices against international standards, fill existing research gaps, and provide practical pathways to enhance supply chain effectiveness.

2.5. Conceptual framework

By identifying important factors and their interactions, the conceptual framework for this research aims to assess the efficiency of supply chain management (SCM) at the Mekelle factory of MOHA Soft Drink Company. Supply Chain Management Effectiveness (SCME), the dependent variable in this study, will be assessed using a variety of performance metrics, such as cost effectiveness, service level performance, inventory turnover rate, lead time reduction,

The research explores four main independent elements that determine the efficacy of supply chain management (SCME). The first aspect is Procurement Practices, comprising contract and

relationship management, strategic sourcing, e-procurement, supplier evaluation and selection, procurement planning, policy compliance, and risk mitigation approaches.

The second factor, Inventory Management Techniques, includes stock replenishment strategies, forecasting accuracy, warehouse efficiency, obsolescence management, and inventory control systems, such as Just-In-Time (JIT), Economic Order Quantity (EOQ), Material Requirements Planning (MRP), and ABC analysis. The third aspect, Transportation and Distribution Strategies, encompasses last-mile delivery optimization, distribution center operations, route and load planning, selection of transportation modes, and cost-time trade-off studies.

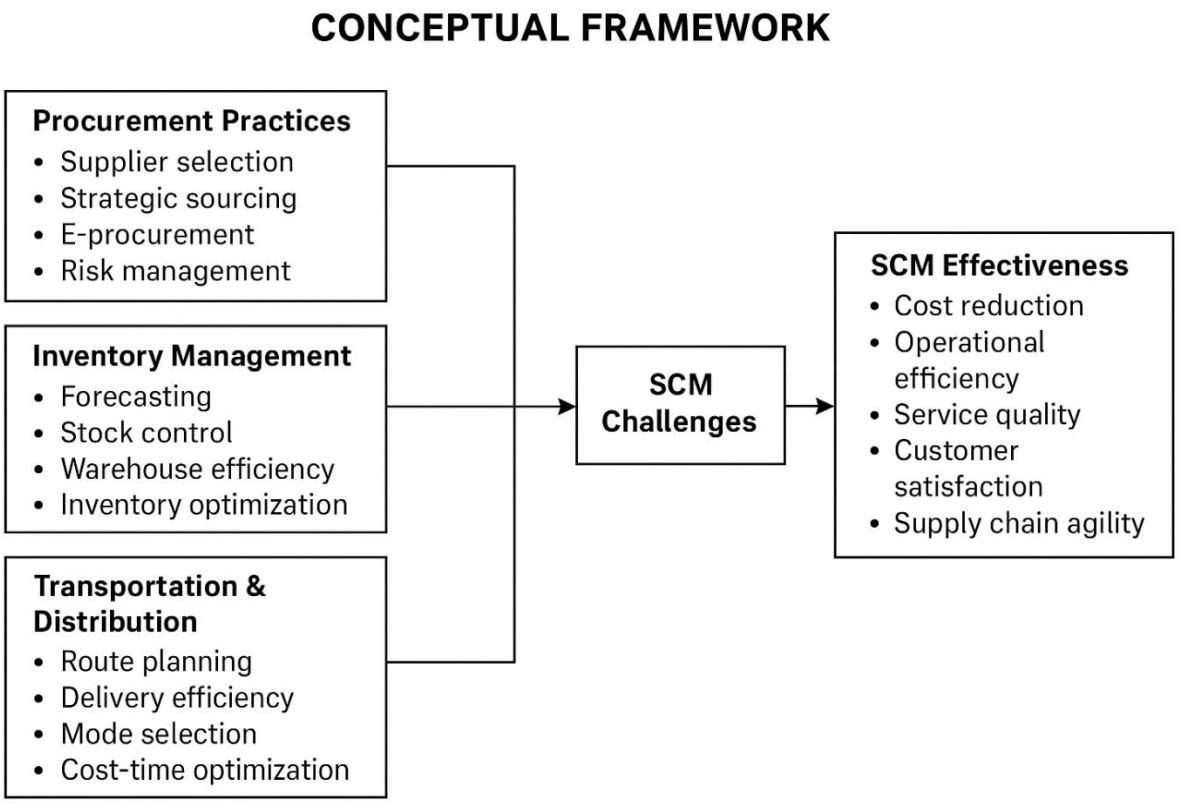
The fourth element, historically referred to as backward (supplier-side) and forward (customer-side) connections, is more effectively defined using conventional SCM terminology as Supplier Integration and Customer Integration. This dimension stresses collaborative planning, forecasting, and the formation of strategic alliances and partnerships to promote coordination and integration throughout the supply chain.

By concentrating on these four aspects, the research tries to represent the complex character of supply chain success, emphasizing both operational practices and relational dynamics that influence performance.

Supply Chain Management Challenges is another moderating or mediating element in the framework that might affect the direction or degree of the link between SCME and the independent variables. Market instability, technology limits, legislative and regulatory restrictions, infrastructure and logistical bottlenecks, capacity and resource constraints, and skill shortages in human resources are some of these difficulties. A thorough evaluation of SCM efficacy and practical suggestions for enhancing the post-conflict business climate at MOHA's Mekelle facility is result from an understanding of how these factors interact.

Generally, Procurement practices (supplier selection, strategic sourcing, e-procurement, and risk management), inventory management (forecasting, stock control, warehouse efficiency, and inventory optimization), and transportation and distribution (route planning, delivery efficiency, mode selection, and cost-time optimization) are the independent variables according to the conceptual framework because they are the main supply chain management (SCM) practices that affect performance. SCM efficacy is the dependent variable, and it is assessed by metrics like supply chain agility, cost reduction, operational efficiency, service quality, and customer

happiness. SCM issues are also highlighted in the framework as mediating factors that influence how much the independent variables affect SCM effectiveness.



Source: Own Source, 2025

Figure 2.1. Conceptual formwork of SCM of EABSC

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Research Design

This study employed a descriptive research design to analyze the practices, effectiveness, and challenges of supply chain management (SCM) at MOHA Soft Drink Company's Mekelle plant. The descriptive design was suitable for understanding and providing a detailed account of existing SCM practices, their effectiveness, and their impact on organizational performance. By integrating both qualitative and quantitative approaches, the study ensures a comprehensive evaluation of SCM practices, as stated by Creswell (2014).

3.2 Sample Size and Sampling Technique

A mix of probability and non-probability sampling techniques was utilized. Specifically, stratified random sampling was performed to ensure that the sample represents the diverse operational activities and workloads in each department. A stratified sample was important to guarantee that each department was suitably represented according to its role in the SCM operations of the study region. The departments served as the stratum for sampling, and within each department, a basic random sample approach was utilized to choose people. The proportionate allocation approach guaranteed that the sample was representative of the operational responsibilities and activities within each department, compensating for changes in workload and priority. This strategy decreased prejudice and allowed for more accurate data collection.

For the non-probability sampling approach, purposive sampling was utilized to pick important informants within each department. Individuals with experience or direct engagement in SCM activities, such as managers and supervisors, were picked to give relevant and knowledgeable insights into the operations.

The sample size determined using the formula developed by Kothar (2004), assuming 95% confidence level and D = 0.5:

$$n = \frac{Nz^2PQ}{D^2(N\text{-}1) + z^2PQ}$$

$$n = \frac{200(1.96)^2(0.9)(0.1)}{(0.05)^2(200\text{-}1) + (1.96)^2(0.9)(0.1)}$$

$$n = 82$$

Where:

n = Sample size

N = Total population (in this case, 200 employees)

Z = Z-value (1.96 for a 95% confidence level)

P = Proportion of the population (0.5 for maximum variability)

D = Margin of error (0.05)

To allocate the 82 samples, a proportional allocation method was applied, ensuring that each department was represented according to its relative importance in the SCM operations. This method helps account for variations in workload and the operational roles of each department, minimizing bias and improving the accuracy of the data collection.

Table 3.1. Sample size and sampling technique

Department	**Number of Employees**	**Percentage of Total Manpower**	**Sample Size (Proportional)**
Warehouse	30	15%	12
Store	20	10%	8
Distribution	25	12.50%	10
Procurement	15	7.50%	6
Sales and Marketing	40	20%	16
Manufacturing	35	17.50%	14
Trade Service	10	5%	4
Fleet	15	7.50%	6
Depot Management	10	5%	4
Total	**200**	**100%**	**82**

3.3. Data Types and Source

This research incorporated both primary and secondary data. Primary data was obtained using structured questionnaires and semi-structured interviews with chosen workers to acquire firsthand knowledge about the study's emphasis. Secondary data acquired from corporate reports,

industry publications, and peer-reviewed academic papers pertaining to supply chain management (SCM) techniques, as defined by Saunders et al. (2019). The combination of these data sources gave a well-rounded foundation for the study's research and findings.

3.4. Data Gathering Instruments

The data collection utilized the following instruments. Questionnaires designed to gather quantitative data on identified variables, such as strategic supplier partnerships and customer relationship management. Semi-structured interviews were also conducted to obtain qualitative insights into the challenges and best practices in supply chain management (SCM), as suggested by Kvale and Brinkmann (2009). These instruments provided both numerical and descriptive data to enrich the study's findings.

3.5. Procedure of data gathering

The data-gathering method followed an organized approach encompassing many critical components. First, approval was acquired from the management of MOHA Soft Drink Company to perform the research. Next, a questionnaire was issued to staff across several departments to obtain pertinent data. An interview was then performed with SCM managers and key stakeholders to acquire further insights into the study's emphasis. Finally, corporate papers are examined and evaluated to validate the core data acquired via questionnaires and interviews. These procedures guaranteed a complete and accurate data-collecting process.

3.6. Data Analysis Method

To meet the aims of this research, a mixed-methods approach was employed, incorporating both quantitative and qualitative data analysis methodologies. The analysis connected with each of the five particular goals specified in the study. For the first objective, which seeks to assess the

effectiveness of procurement practices at MOHA Soft Drink Company's Mekelle plant, the study employed descriptive statistics such as mean and standard deviation to measure perceptions of procurement efficiency, supplier relationships, and contract management. In addition, inferential statistical methods such as Pearson correlation are employed to establish the link between procurement procedures and outcomes like supply consistency and cost reductions. Thematic analysis of qualitative comments from procurement officers supplemented the numerical data by showing deeper insights into difficulties and opportunities for development. For the second objective, evaluating the success of inventory management techniques, the research begins with descriptive data to examine important indicators, including frequency of stockouts, utilization of reorder points, and warehouse accuracy. If historical data is available, trend analysis is performed to examine variations in inventory performance over time. A chi-square test was done to assess whether there is any statistically significant relationship between inventory techniques and performance results. In-depth interviews with warehouse personnel were evaluated qualitatively to extract themes surrounding inefficiencies, dangers of overstocking, and obsolescence.

The third aim focuses on the efficacy of transportation and distribution techniques. Here, the research employed both quantitative metrics such as delivery timeliness, transportation costs, and vehicle utilization and regression analysis to analyze how distribution patterns impact delivery success. Where necessary, a gap analysis was undertaken by comparing current delivery indicators to intended performance requirements. Qualitative data from logistics professionals was submitted to thematic coding to discover flaws in route planning, fuel economy, and last-mile delivery.

To analyze the company's backward and forward connections (the fourth aim), the study mixed quantitative evaluations of the frequency and strength of supplier and customer ties with factor analysis if required to verify composite structures. Descriptive data can assist in measuring the extent of shared planning, information sharing, and long-term relationships with both suppliers and customers. Additionally, cross-tabulations were utilized to study variances across various types of suppliers and customers. Qualitative interviews was given deep insights into the strategic nature of these connections and revealed gaps in integration.

Lastly, for the fifth objective, identifying supply chain management challenges, thematic content analysis is the key technique, employing data from interviews and open-ended survey answers. This would enable classification of the most frequent and severe issues experienced by the organization, such as infrastructural limits, regulatory impediments, or internal coordination problems. Where issues are assessed statistically, descriptive statistics such as frequency and ranking employed. A SWOT analysis was also included to outline internal and external issues impacting the supply chain.

All numeric data was examined using statistical software such as SPSS or STATA, while qualitative data was coded and interpreted using a manual thematic approach. Excel provided basic data aggregation and graphical display. The integrated analytical approaches allowed the research to deliver a well-rounded and data-driven assessment of the supply chain procedures and efficacy at MOHA Soft Drink Company's Mekelle factory.

3.7. Validity and Reliability

In order to ensure the validity and reliability of the supply chain management (SCM) practices questionnaire for MOHA Soft Drink Company Mekelle Plant, the measurement items were aligned with two established frameworks: the Supply Chain Management Excellence (SCME) framework and the Supply Chain Operations Reference (SCOR) Key Performance Indicators (KPIs). The statements in procurement, inventory, transportation, linkages, and challenges directly reflect the SCOR performance dimensions of agility, cost, responsiveness, and asset management. This ensures that the instrument accurately captures the constructs it is designed to measure, which is how validity was established through content validity. By creating the questions using the SCME framework, which encourages efficiency, collaboration, and integration throughout supply chain activities, construct validity was raised. Reliability was addressed by developing clear and consistent Likert-scale questions, avoiding ambiguity and guaranteeing that answers may be replicated under identical settings. Furthermore, internal consistency dependability may be verified by Cronbach's alpha, where values above 0.70 would show that the items within each part (e.g., procurement or inventory management) consistently measure the same underlying construct. Thus, the instrument is both valid, as it assesses supply chain operations in accordance with accepted models, and dependable, as it delivers steady and consistent findings.

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3.8. Ethical Issues of the Research

Ethical issues for this research were strictly maintained to guarantee the preservation of participants' rights and the integrity of the study. Informed permission sought from all participants, ensuring they are fully aware of the study's goal and that their participation is totally voluntary. Confidentiality maintained by providing anonymity and safe management of any sensitive data obtained during the study process. Non-bias stressed, maintaining impartiality in both data collection and processing to prevent distorted outcomes. Finally, ethical approval was sought from the appropriate institutional review board before initiating the research (Resnik, 2020).

CHAPTER FOUR

4. RESULT AND DISCUSSION

4.1 Introduction

In this chapter, the case study of the MOHA Soft Drink Company in Mekelle is used to showcase

the findings and conversations from the Supply Chain Management of MOHA Soft Drink Company. The data on the Practices and Effectiveness of Supply Chain Management of MOHA Soft Drink Company in Mekelle was gathered and presented using a descriptive statistical analysis. As part of the inferential analysis process, which is carried out to accomplish the above-described goal, frequency tables, percentages, mean, and standard deviation are also utilized to examine the respondents' responses. 82 questionnaires in total were given out to respondents by the researcher.

4.2 Demographic Characteristics of the Respondents

This section summarizes the demographic characteristics of the sample, which include gender distribution, age distribution, and position in the organization, years of experience in SCM, level of education, and work experience of respondents. The purpose of the demographic analysis in this research is to describe the characteristics of the sample, such as the proportion of gender distribution, age distribution, position in the organization, years of experience in SCM, level of education, and work experience of respondents, so that the analysis could be more meaningful for readers.

Strong internal consistency was found in every component of the questionnaire used to evaluate Supply Chain Management (SCM) procedures at MOHA Soft Drink Company, Mekelle Plant, according to the reliability study. The Cronbach's Alpha for the items used to evaluate procurement-related functions was 0.881 in Procurement Practices, which concentrated on procurement practices. With a dependability value of 0.864, Inventory Management Techniques, which looked at inventory management techniques, likewise showed a high degree of internal consistency among its elements. The Cronbach's Alpha value for Transportation and Distribution Strategies in Transportation & Distribution Strategies was 0.891, indicating good to exceptional consistency. With the highest dependability score of 0.902, Backward and Forward Linkages, which evaluated backward and forward links, demonstrated outstanding internal consistency and coherence across the questions pertaining to supplier and customer interactions. With a Cronbach's Alpha of 0.875, Supply Chain Challenges, which focused on supply chain challenges, once again showed good internal consistency.

The instrument's total dependability score, which included all 50 items, was 0.85. With all components scoring much higher than the usually recognized cutoff of 0.70 for Cronbach's Alpha, this demonstrates that the complete questionnaire is a valid instrument for assessing SCM

procedures. According to these findings, the scale is reliable and consistent for use in additional statistical analysis and interpretation. This finding is supported by Table 1 in Appendix II.

Table 4.1. Demographic Characteristics of the Respondents

Sex	Frequency	Percentage (%)
Male	58	71.00%
Female	24	29.00%
Age Group	Frequency	Percentage (%)
18–25	12	14.60%
26–35	35	42.70%
36–45	20	24.40%
46–55	10	12.20%
56+	5	6.10%
Position Title	Frequency	Percentage (%)
Logistics Officer	22	26.80%
Procurement Officer	18	22.00%
Warehouse Supervisor	13	15.90%
Inventory Controller	8	9.80%
SCM Manager	10	12.20%
Suppliers	6	7.30%
Customers/Retailers	5	6.10%
Educational level	Frequency	Percentage (%)
Diploma	10	12.20%
Bachelor	50	62.00%
Master	20	24.40%
PhD	2	2.40%
Work Experience Category	Frequency (n)	Percentage (%)
Under 3 years	22	26.80%
3-6 years	45	54.90%

7-10 years	13	15.90%
Over 10 years	12	14.60%

Table 4.1 below shows that 71.00 percent of MOHA's SCM staff are men. This is consistent with broader patterns in Ethiopia's other emerging nations' manufacturing and logistics industries, where SCM positions are frequently held by men (Kidanemariam & Assefa, 2020). Nonetheless, there are 29.00 percent females present.

According to table 4.1 above, the majority of respondents (42.7%) are between the ages of 26 and 35, indicating a relatively youthful workforce in the SCM department. This age group is frequently flexible and receptive to contemporary SCM systems like ERP and digital logistics tools (Gebreeyesus & Sonobe, 2012), while the moderate representation of older age groups suggests a combination of experience and creativity.

The distribution of responders by supply chain position is shown in Table 4.1. The results show that almost half of the respondents are logistics officers (26.8%) and procurement officers (22.0%), underscoring their crucial roles in supply chain management. These two teams play a crucial role in guaranteeing efficient procurement, seamless material flow, and overall operational success (Christopher, 2016). Their greater participation suggests that these players bear a direct burden of daily decision-making and supply chain management (SCM) difficulties.

Warehouse supervisors (15.9%) and inventory controllers (9.8%) jointly account for a quarter of respondents. This underlines the necessity of storage, inventory management, and demand forecasting in SCM effectiveness. Effective inventory and warehouse management are vital for minimizing costs, eliminating stockouts, and assuring customer satisfaction (Zhu et al., 2018). Their comments are critical for determining operational efficiency and dangers associated to animal management.

SCM managers (12.2%) constitute the strategic layer of the supply chain personnel. Their position comprises decision-making on procurement strategy, supplier relationships, and performance monitoring. Although fewer in number, their ideas give a wider perspective on coordination and system-wide integration, which are crucial for supply chain resilience (Ivanov & Dolgui, 2020).

Customers/retailers (6.1%) and suppliers (7.3%) are underrepresented in the sample. However, since they connect upstream and downstream processes, they are crucial external players. While retailers provide insight into customer demand and the delivery of final services, suppliers contribute to the quality and dependability of materials (Mentzer et al., 2001). The study's reliance on internal organizational viewpoints rather than external stakeholder views may have an impact on the conclusions' generalizability, as shown by the comparatively small percentage of these respondents.

Overall, the distribution indicates a fair representation across operational, tactical, and strategic levels of the supply chain. This variety of respondents improves the research by gathering viewpoints across many layers of supply chain operations, therefore boosting the validity of the results (Seuring & Müller, 2008). However, the underrepresentation of external players (suppliers and retailers) may restrict insights into end-to-end supply chain performance, an area that future study should enhance.

According to table 4.1, the majority of respondents (61%) had a bachelor's degree, which is a good educational requirement for operational and mid-level supply chain management positions (Lambert & Cooper, 2000). The fact that 24.4% of MOHA's workforce holds master's degrees and a tiny percentage holds a PhD suggests that the organization places a high importance on academic credentials, which might help its knowledge-based tactics for SCM practices be more effective.

According the above table 4.1, an examination of the respondents' work experiences at MOHA Soft Drink Company in Mekelle provides valuable information on the makeup and capabilities of its supply chain personnel. The majority of responders (54.9%) are in the group of having three to six years of experience. Considering that they may still be building their strategic supply chain management (SCM) skills, this indicates that most of the staff members have a reasonable level of expertise and are acquainted with the company's procurement, inventory, and logistics processes. Christopher (2016) asserts that professionals with mid-level experience may make a significant contribution to operational efficiency, particularly if they get ongoing training and are involved in organizational decision-making.

However, a significant portion of the labor force (26.8%) has less than three years of experience. Staff turnover or recent hiring as a result of growth might be the cause of this. Even while they could provide fresh ideas, technical flexibility, and vitality, these workers often lack the institutional memory and tacit knowledge that are essential to SCM effectiveness. Mentzer et al. (2001) emphasize how important this embedded knowledge is to preserving supply chain systems' robustness and consistency. Therefore, it's possible that new hires are still getting used to the company's internal culture and operational processes. 30.5% of the respondents also have more than seven years of experience (15.9% have seven to ten years and 14.6% have more than ten years). These people provide a great deal of institutional memory and leadership to the supply chain system and most likely hold strategic or managerial positions. Their deep comprehension of internal operations is crucial for process improvement, long-term planning, and coaching younger employees. The need of seasoned experts in risk reduction, strategic planning, and the creation of sustainable supply chain models is emphasized by Waters (2011).

With a solid middle layer of experience backed by both seasoned professionals and more recent hires, this distribution of work experience shows a balanced human resource organization overall. If accompanied by mentorship programs, institutional learning mechanisms, and capacity-building initiatives, this combination may promote dynamic performance.

Table 4.2. Effectiveness of procurement practices at MOHA Soft Drink Company

Statement	1 (Freq/ %)	2 (Freq/ %)	3 (Freq/ %)	4 (Freq/ %)	5 (Freq /%)	Mean	Std. Dev.
The company uses clear criteria when selecting suppliers	2 / 20.0%	4 / 40.0%	2 / 20.0%	2 / 20.0%	0 / 0.0%	2.3	1.06
Supplier performance is regularly evaluated	2 / 20.0%	2 / 20.0%	3 / 30.0%	1 / 10.0%	2 / 20.0 %	2.5	1.35
Procurement policies are consistently followed	0 / 0.0%	10 / 100.0 %	0 / 0.0%	0 / 0.0%	0 / 0.0%	2.3	0.67

The company uses strategic sourcing to reduce costs	4 / 40.0%	5 / 50.0%	1 / 10.0%	0 / 0.0%	0 / 0.0%	1.8	0.63
E-procurement tools are used effectively in the procurement process	0 / 0.0%	1 / 10.0%	3 / 30.0%	4 / 40.0%	2 / 20.0 %	3.2	1.14
Procurement staff are well-trained in sourcing and negotiation techniques	0 / 0.0%	5 / 50.0%	4 / 40.0%	1 / 10.0%	0 / 0.0%	2.4	0.7
The procurement process is transparent and efficient	3 / 30.0%	4 / 40.0%	3 / 30.0%	0 / 0.0%	0 / 0.0%	2.5	0.85
The company maintains strong relationships with key suppliers	1 / 10.0%	0 / 0.0%	2 / 20.0%	3 / 30.0%	4 / 40.0 %	4	1.25
Risk mitigation is considered in procurement decisions	0 / 0.0%	0 / 0.0%	1 / 10.0%	3 / 30.0%	6 / 60.0 %	4.4	0.7
Procurement activities contribute positively to supply chain goals	0 / 0.0%	1 / 10.0%	3 / 30.0%	4 / 40.0%	2 / 20.0 %	3.1	0.74
Overall						**2.85**	

NB: 1: SDA, 2: DA, 3: N, 4: A, and 5: SA

Based on the above table 4.2, the findings show differing opinions on how well MOHA Soft Drink Company in Mekelle's procurement procedures works. Strategic sourcing, policy consistency, and staff training are among the crucial areas that need significant development, even while certain elements, such supplier relationship management and risk reduction, show strength. The regarding the supplier selection criterion, 60% of respondents gave it an unsatisfactory grade (1 or 2), with a mean score of 2.30 (SD = 1.06). This indicates a lack of rigorous assessment procedures and openness in the selection of suppliers, which might result in arbitrary procurement choices. According to Monczka et al. (2016), reducing risks and

enhancing cost-effectiveness and quality results need specified supplier selection criteria. The average answer was 2.50 (SD = 1.35), with 40% of respondents disagreeing or strongly disagreeing that supplier performance evaluations are conducted on a regular basis. This suggests the possibility of erratic or inadequately organized supplier evaluations. Krause, Handfield, and Scannell (1998) stress the value of regular assessments in encouraging responsibility and advancing supplier advancements. Applying procurement policies seems to be a big problem. All respondents chose to rate their level of discontent at 2, with a mean score of 2.30 (SD = 0.67), indicating systemic flaws in the way policies are enforced. Thai (2001) cautions that the administration of policies inconsistently raises the possibility of inefficiencies, partiality, and ethical transgressions.

The practice of strategic sourcing to cut costs was scored lowest, with a mean of 1.80 (SD = 0.63), and 90% of respondents expressing disapproval. This suggests that strategic sourcing is either not performed or poorly understood. According to Porter (1985), such techniques are crucial to attaining competitive advantage, cost reductions, and greater supplier leverage. On a more positive note, e-procurement tools earned a mean of 3.20 (SD = 1.14), with 60% of responders expressing moderate to strong agreement. This shows that although digital technologies are in use, their full potential may not yet be reached. Gunasekaran and Ngai (2008) suggest that well-implemented e-procurement systems may increase transparency, speed, and accuracy in buying. The training of procurement workers also reveals space for improvement, with a mean of 2.40 (SD = 0.70). Half of the respondents evaluated it badly, suggesting a lack of proper training in sourcing and bargaining. Cousins et al. (2006) stress that procurement effectiveness is strongly reliant on human capital, and that undertrained people might undermine performance. Regarding transparency and efficiency, the mean was 2.50 (SD = 0.85), with 70% expressing disapproval. This reveals major issues regarding the procedural integrity and efficiency of procurement processes. The World Bank (2011) highlights that lack of transparency increases susceptibility to corruption and diminishes confidence. In contrast, supplier relationship management was a noticeable strength, getting a mean of 4.00 (SD = 1.25), with 70% of respondents agreeing or strongly agreeing that the organization maintains solid ties with suppliers. Christopher (2016) reinforces this conclusion, emphasizing that good supplier cooperation boosts dependability and overall supply chain performance. The firm also fared well

in risk reduction, with a mean of 4.40 (SD = 0.70). An overwhelming 90% of participants believed that procurement choices address risk, showing a proactive and resilient procurement culture. Waters (2011) argues that such methods are vital for maintaining operations in unpredictable situations. Lastly, the impression of procurement's support to overall supply chain objectives received a modest 3.10 (SD = 0.74), with 60% of respondents expressing favorable comments. This shows partial coordination between procurement and wider supply chain strategy. As Chopra and Meindl (2019) suggest, procurement must be strategically integrated into the supply chain to optimize competitive performance. In summary, although MOHA exhibits strengths in supplier engagement and risk-aware procurement, numerous functional areas including policy enforcement, staff training, and strategic sourcing require focused improvements. Strengthening these weak locations might greatly boost procurement effectiveness and the company's overall supply chain performance. A significant degree of agreement among respondents about the effectiveness and dependability of the company's procurement operations is shown by the overall mean score of 2.85 for the efficacy of procurement processes at MOHA Soft Drink Company, Mekelle Plant.

In comparison with empirical and theoretical literature, MOHA's procurement performance shows both alignment and gaps. Strengths in supplier collaboration and risk mitigation correspond with contemporary SCM frameworks that emphasize relational governance and proactive risk management (Christopher, 2016; Waters, 2011). However, persistent weaknesses in strategic sourcing, policy enforcement, and staff training contrast with best practices observed in successful firms globally, where structured sourcing protocols, consistent policy application, and skilled human capital are central to achieving efficiency and competitive advantage (Monczka et al., 2016; Porter, 1985; Cousins et al., 2006). According to empirical research conducted in comparable emerging-market contexts, businesses that implement integrated digital procurement systems and thorough training initiatives see improvements in cost control, operational resilience, and supply chain performance (Gunasekaran & Ngai, 2008; Krause, Handfield & Scannell, 1998). In order to close the gap between actual practice and SCM theoretical ideals, MOHA's procurement efficacy and overall supply chain performance might be greatly improved by tackling these weak areas through structured sourcing, strong policy frameworks, and increased staff capability.

Table 4. 3. the relationship between Variables and Supply Chain Goals and Strategic Sourcing

Variables	Supply Chain Goals			Strategic Sourcing		
	Pearson Correlation	**Sig. (1-tailed)**	**N**	**Pearson Correlation**	**Sig. (1-tailed)**	**N**
Clear Supplier Criteria	0.32	0.004	82	0.17	0.062	82
Supplier Performance Evaluation	0.34	0.002		0.18	0.055	
Procurement Policies Followed	0.25	0.013		0.37	0.001	
E-Procurement Tools Used Effectively	0.13	0.11		0.05	0.32	
Procurement Staff Training	0.24	0.015		–.010	0.46	
Transparent & Efficient Process	0.1	0.17		0.27	0.009	
Strong Supplier Relationships	0.3	0.006		–.290	0.004	
Risk Mitigation Considered	0.3	0.006		–.120	0.135	
Cumulative Result	**.25**	**.008**		**.08**	**.114**	

As indicated the above table 4.3, using data from 82 participants, the Pearson correlation analysis was used to investigate the link between two important outcome variables Supply Chain Goals and Strategic Sourcing and different procurement techniques. In terms of how procurement procedures fit with targeted objectives, the data show both strengths and limits, with varied degrees of connection. The average Pearson correlation for the outcome variable Supply Chain Goals is 0.25, with a significance level of $p = 0.008$ (1-tailed). The degree to which supply chain goals are being achieved and procurement procedures are shown to be somewhat positively correlated. Effective procurement practices, including as transparency, risk mitigation, and staff competency, may significantly aid in accomplishing more general supply chain objectives like cost reduction, dependability, and customer satisfaction, according to the statistically significant association at the 0.01 level. Chopra and Meindl (2019) contend that coordinated procurement procedures are critical to the overall competitiveness and responsiveness of the supply chain, and this study corroborates their findings.

On the other hand, the variable Strategic Sourcing has a non-significant p-value of 0.114 and an average Pearson correlation of only 0.08. This implies a tenuous and statistically negligible

correlation between MOHA's adoption of strategic sourcing and its current procurement procedures. In many instances, the connection is even negative, suggesting that the understanding and use of strategic sourcing may be out of sync or inconsistent. The low mean score (1.80) for strategic sourcing practices in your data previously suggests that strategic sourcing concepts may not be fully used or integrated into the procurement framework. This result is consistent with those results. the Strategic sourcing requires an organized, analytical approach to supplier management and cost minimization, which the organization seems to lack (Porter, 1985; Monczka et al., 2016).

In line with this, the qualitative report stated that "The investigation highlighted many repeating patterns that indicate both obstacles and potential within the procurement system. One prominent topic is the absence of systematic supplier assessment, as shown by varied scores on supplier selection and evaluation methods. This suggests limitations in adopting clear and standard criteria for finding and assessing vendors, which may influence overall procurement effectiveness. Another major concern is the restricted strategic sourcing approach. The low mean score in this category implies that procurement efforts are mostly reactive rather than led by long-term cost-saving measures, leading to possible inefficiencies. A related feature is the inconsistent use of digital procurement tools, where some officers acknowledged efficient use of e-tools, while others did not. The reason for this mismatch alludes to poor technology integration, which might hamper process speed and accuracy. The sense of poor transparency also surfaced significantly, with many respondents expressing worries about the clarity and openness of procurement processes. This might lead to trust concerns and lower overall responsibility in the process. On the bright side, respondents observed good supplier connections and risk planning techniques, suggesting a foundation for cooperation and resilience throughout the supply chain. This strength gives a good chance to better negotiating results and adopt common risk reduction techniques. However, there is evidence of incomplete competence in sourcing and negotiating, as indicated in middling scores for staff training. This reveals a capacity mismatch that may impair the ability to acquire favorable terms or locate suitable suppliers. Lastly, the theme of limited integration with overall supply chain goals shows that procurement activities are not yet entirely matched with larger company objectives, asking for further strategic coordination."

Qualitative evidence backs up these quantitative conclusions by showing recurrent trends in the procurement system's advantages and disadvantages. Inconsistent use of digital procurement tools, a lack of systematic supplier assessment, and a lack of openness are major issues that could jeopardize confidence and accountability. In contrast, participants consistently reported proactive risk mitigation procedures and good supplier connections, which laid the groundwork for collaborative tactics and increased resilience. Nonetheless, deficiencies in personnel competencies, particularly in sourcing and negotiating, as well as poor alignment of procurement activities with overall supply chain objectives, underscore the need for focused capacity-building and strategic integration. Collectively, these results indicate that while MOHA has a solid foundation in supplier engagement and risk management, substantial improvements in strategic sourcing, policy enforcement, technology adoption, and staff training are required to fully realize procurement's contribution to supply chain performance.

Table 4.4. the effectiveness of inventory management techniques used by the company

Statement	F 1	(%)	F 2	(%)	F 3	(%)	F 4	(%)	F 5	(%)	Mean	Std. Dev.
The company uses reliable inventory control systems	2	2.40 %	8	9.80 %	24	29.30%	32	39.00 %	16	19.50 %	3.6	1.03
Stock levels are accurately recorded and monitored	0	0.00 %	10	12.20%	26	31.70%	34	41.50 %	12	14.60 %	3.7	0.96
Forecasting methods are accurate and data-driven	1	1.20 %	6	7.30 %	18	22.00%	38	46.30 %	19	23.20 %	4	0.88
Inventory replenishment is timely and well-coordinated	0	0.00 %	5	6.10 %	23	28.00%	41	50.00 %	13	15.90 %	3.8	0.93
Warehousing operations are efficient and well-organized	3	3.70 %	8	9.80 %	34	41.50%	29	35.40 %	8	9.80%	3.4	0.97
Inventory losses due to spoilage or theft are minimal	2	2.40 %	6	7.30 %	28	34.10%	34	41.50 %	12	14.60 %	3.7	1
Obsolete inventory is properly	1	1.20 %	5	6.10 %	27	32.90%	35	42.70 %	14	17.10 %	3.8	0.93

managed and minimized												
The inventory system integrates with other SCM functions	0	0.00 %	3	3.70 %	15	18.30%	40	48.80 %	24	29.30 %	4.2	0.85
Safety stock levels are appropriately maintained	1	1.20 %	5	6.10 %	19	23.20%	41	50.00 %	16	19.50 %	4	0.91
Inventory turnover rates are regularly tracked and optimized	0	0.00 %	6	7.30 %	21	25.60%	42	51.20 %	13	15.90 %	3.9	0.88
Overall												**3.71**

NB: 1: SDA, 2: DA, 3: N, 4: A, and 5: SA

As indicated the table above 4.4, the results suggest that MOHA Soft Drink Company demonstrates reasonably great performance in its inventory management methods, as demonstrated in the consistently high mean scores (range from 3.4 to 4.2) across major performance categories. This reflects a well-structured inventory system that is substantially aligned with best practices in supply chain management. To begin with, the statement "The company uses reliable inventory control systems" obtained a mean score of 3.6 (SD = 1.03). A combined 58.5% of respondents agreed or strongly agreed (ratings 4 and 5), demonstrating widespread trust in the dependability of the inventory systems, however a remarkable 29.3% ranked it as neutral. This suggests space for additional strengthening via system audits or technological enhancements.

Accuracy in inventory tracking is another crucial component. The statement "Stock levels are accurately recorded and monitored" got a somewhat higher mean of 3.7 (SD = 0.96), with 56.1% of participants assessing it positively. This demonstrates an operational strength that enables seamless order fulfillment and prevents instances of overstocking or stockouts, similar with Christopher (2016), who identifies real-time visibility as vital to inventory performance. Forecasting techniques seem to be a major strength for MOHA, with a mean score of 4.0 (SD = 0.88) and 69.5% of respondents evaluating it favorably (4 or 5). the Only 1.2% strongly disagreed. This shows that the organization employs data-driven tactics, which is crucial for anticipating demand, minimizing shortages, and decreasing carrying costs. This coincides with

Silver, Pyke, and Thomas (2017), who suggest that accurate forecasting directly enhances inventory planning efficiency.

The item “Inventory replenishment is timely and well-coordinated” earned a mean of 3.8 (SD = 0.93), with half of the respondents agreeing and another 15.9% strongly agreeing. This is critical for guaranteeing continued operations, notably in the beverage sector where stockouts may lead to lost market share. The data show that MOHA likely leverages reorder point systems or automatic triggers, a recommended practice stressed by Zipkin (2000). Warehousing efficiency, although still adequate, obtained a significantly lower mean of 3.4 (SD = 0.97). About 41.5% assessed it as neutral, while just 45.2% agreed or strongly agreed. This shows certain constraints in physical inventory management or space use, which might effect retrieval speed or labor efficiency. This discovery may merit more inquiry into warehouse architecture, automation, or personnel training. The organization also looks to keep a fair control over inventory losses, with the statement “Inventory losses due to spoilage or theft are minimal” scoring 3.7 (SD = 1.00). Nearly 56.1% of respondents evaluated this highly, indicating effective loss prevention procedures, maybe including security systems and inventory checks.

The statement “Obsolete inventory is properly managed and minimized” got a mean score of 3.8 (SD = 0.93), suggesting rather high performance in disposing of or recycling unsellable items. This is vital for minimizing storage costs and increasing turnover rates, and it indicates adherence to appropriate inventory hygiene procedures. Of particular strength is the company's ability to link inventory systems with other supply chain tasks, such as procurement, sales, and distribution. This statement received the highest mean score of 4.2 (SD = 0.85), with 78.1% of respondents indicating agreement. This degree of integration is a feature of mature inventory systems and helps to greater coordination and responsiveness, as observed by Chopra and Meindl (2019). Safety stock maintenance also performed well, obtaining a mean of 4.0 (SD = 0.91), with half of the respondents picking 4 and almost 20% selecting 5. This shows that the organization is prepared to manage demand changes and supply interruptions, which boosts service levels and decreases the danger of stockouts. Lastly, inventory turnover monitoring obtained a respectable mean score of 3.9 (SD = 0.88). With over 67% of respondents expressing agreement, this indicates the company’s dedication to monitoring performance measures and managing stock levels critical to lowering holding costs and increasing cash flow. The section's total mean score

of 3.71 suggests that respondents had a favorable opinion of the evaluated feature, which was most likely connected to transportation, inventory management, or another SCM component.

Comparing these empirical findings with the literature reveals that MOHA's inventory practices exhibit several characteristics of effective supply chain management, including forecasting accuracy, integration with other functions, and loss prevention (Christopher, 2016; Silver et al., 2017; Chopra & Meindl, 2019). However, aspects such as warehousing efficiency and neutral judgments in system reliability reveal gaps consistent with global data that even moderately performing enterprises encounter issues in physical space optimization and digital adoption (Gunasekaran et al., 2017; Waters, 2011). These results suggest that while MOHA's inventory management aligns with theoretical and empirical best practices, targeted interventions in technology, warehouse operations, and system audits could further enhance performance, leading to greater operational efficiency, reduced costs, and improved supply chain responsiveness.

Table 4.5. Inventory Control Systems with Inventory Turnover Rates

Inventory Turnover Rates	**Inventory Control Systems**			
	Low	**Medium**	**High**	**Total**
Low	4	3	7	14
%	1.9	2.6	9.6	
Medium	4	7	20	31
%	4.2	5.7	21.2	
High	3	5	29	37
%	5	6.8	25.3	
Total	11	15	56	82
Test	**Value**	**df**	**Asymp. Sig. (2-sided)**	
Pearson Chi-Square	5.890	4	.207	

As shows the above table 4.5, the cross-tabulation of Inventory Control Systems and Inventory Turnover Rates among the 82 respondents indicates noticeable patterns but no statistically significant correlation. The findings demonstrate that respondents who assessed the company's inventory control system as high were more likely to also report high inventory turnover rates with 29 out of 37 respondents (nearly 78%) in the "high" control systems group also reporting

high turnover rates. Similarly, among those reporting medium inventory control systems, 20 out of 31 respondents (approximately 65%) reported high turnover rates, whereas for the low control systems group, only 7 out of 14 respondents (50%) indicated high turnover rates. This implies a positive association where improved inventory control corresponds with higher turnover performance. Nevertheless, a Chi-Square test for independence revealed a Pearson Chi-Square value of 5.890 with 4 degrees of freedom and a p-value of 0.207. This result implies that the observed correlation between inventory management system effectiveness and inventory turnover rates is not statistically significant at the customary 0.05 level. Likewise, the likelihood ratio test ($p = 0.209$) and the linear-by-linear association test ($p = 0.277$) likewise demonstrate the absence of substantial dependency between these variables. The lack of statistical significance can be ascribed to the sample size or heterogeneity in views among respondents. Nonetheless, the observed pattern implies a possible trend where stronger inventory management systems might be connected to greater inventory turnover, matching with the conceptual understanding in supply chain literature. Efficient inventory management systems often promote accurate stock monitoring, prompt replenishment, and elimination of surplus stock, all of which lead to greater turnover rates (Silver, Pyke, & Peterson, 1998). In practical terms, although MOHA Soft Drink Company exhibits symptoms of enhanced inventory management correlating with positive turnover, the available data do not give adequate evidence to definitively support this association. Further research with bigger samples or more objective inventory performance data might further elucidate this link. This finding is supported by Table 2 in Appendix II.

In line with this, the qualitative report stated that “the number of recurrent issues including inventory management inefficiencies, overstocking hazards, and the difficulties of managing outmoded material surfaced from in-depth interviews with warehouse staff. Operational inefficiencies were one of the main themes found. Numerous participants noted that there are often differences between computerized inventory records and actual stock. Confusion, order fulfillment delays, and a decline in confidence in the inventory management systems were often caused by these discrepancies. Insufficient inventory software training and delays in updating stock data upon delivery or receipt were blamed by some for these problems. The risk of overstocking was another recurring issue. Many warehouse officers acknowledged that they often purposefully overordered because they were afraid of running out of necessary goods

because of supplier delays. Nevertheless, there are a number of downsides to this strategy. Critical storage space was taken up by overstocked commodities, which also heightened the likelihood of product deterioration, especially for seasonal or perishable products. Furthermore, overstocking lowers the company's financial flexibility by locking up critical working capital.The difficulty of handling outdated inventories was the third important topic covered. According to the respondents, there are often no explicit regulations or proactive mechanisms in place to recognize and get rid of outdated goods. Others pointed out that there was institutional opposition to write-offs because of accountability issues, and that obsolete material often stayed undetected until year-end inventory checks. As a consequence, extra inventory piled up in warehouse corners, taking up room and causing mess. A few underlying themes arose from each interaction. Obsolescence and overstocking were typically caused by a lack of coordination and inadequate communication between the warehouse, sales, and procurement divisions. Additionally, despite the availability of digital inventory systems, their usefulness was weakened by their poor adoption and technical concerns. Instead of converting to more productive, demand-driven inventory models, many warehouse staff continued to operate with a "just-in-case" approach. The qualitative data indicates to the necessity of stronger cross-functional communication, real-time inventory management, regular training for warehouse staff, and a codified policy for managing outdated items. Making the change from reactive to proactive inventory management approaches may considerably enhance supply chain waste reduction and operational efficiency.”

Overall, while MOHA Soft Drink Company exhibits hints of enhanced inventory control related with greater turnover rates, the absence of statistical significance in the quantitative analysis suggests that these improvements are not yet entirely systemic. Comparing these conclusions with empirical studies, it is obvious that organizations with integrated and real-time inventory systems experience higher turnover, lower waste, and increased operational efficiency (Christopher, 2016; Chopra & Meindl, 2019).

The qualitative evidence shows the need for proactive inventory policies, enhanced cross-functional collaboration, digital adoption, and frequent staff training. Strengthening these areas could boost the effectiveness of inventory control, prevent obsolescence and overstocking, and

align operational performance more closely with theoretical and empirical best practices in supply chain management.

Table 4.6. The effectiveness of transportation and distribution strategies of the company

Indicators	1Freq (%)	2Freq (%)	3Freq (%)	4Freq (%)	5Freq (%)	Mean	StdDev
Transportation modes are selected based on cost and speed considerations	0 (0.0%)	2 (2.4%)	1 (1.2%)	40 (48.8%)	39 (47.6%)	4.41	0.65
Route optimization tools are used to reduce delivery time and costs	0 (0.0%)	2 (2.4%)	6 (7.3%)	22 (26.8%)	52 (63.4%)	4.51	0.74
Delivery schedules are consistently met	0 (0.0%)	3 (3.7%)	9 (11.0%)	40 (48.8%)	30 (36.6%)	4.18	0.77
Company uses well-maintained and suitable vehicles for distribution	0 (0.0%)	21 (25.6%)	27 (32.9%)	17 (20.7%)	17 (20.7%)	3.37	1.08
Fuel and maintenance costs are monitored and managed efficiently	0 (0.0%)	21 (25.6%)	30 (36.6%)	28 (34.1%)	3 (3.7%)	3.16	0.85
Distribution center operations are timely and accurate	1 (1.2%)	27 (32.9%)	26 (31.7%)	17 (20.7%)	11 (13.4%)	3.12	1.06
Last-mile delivery is effective and reliable	0 (0.0%)	3 (3.7%)	7 (8.5%)	35 (42.7%)	37 (45.1%)	4.29	0.78
Transportation staff are well-trained and responsive	0 (0.0%)	2 (2.4%)	3 (3.7%)	44 (53.7%)	33 (40.2%)	4.32	0.66
Communication between logistics and other departments is effective	0 (0.0%)	1 (1.2%)	4 (4.9%)	28 (34.1%)	49 (59.8%)	4.52	0.65

Customers are satisfied with the company's distribution service	0 (0.0%)	1 (1.2%)	2 (2.4%)	30 (36.6%)	49 (59.8%)	4.55	0.61
Overall						**4.04**	

NB: 1: SDA, 2: DA, 3: N, 4: A, and 5: SA

According the above table 4.6, high mean scores ranging from 3.12 to 4.55 on the efficacy of MOHA Soft Drink Company's distribution and transportation methods indicate a generally favorable performance across a number of operational variables. This implies that effective delivery and logistics management, which are essential elements for gaining a competitive edge in supply chain management, are given top priority by the organization. Important strengths are shown in areas like the choice of transportation mode, which received a high mean score of 4.41 (SD = 0.65), with 96.4% of respondents giving this behavior a favorable grade (4 or 5). This suggests that, in line with Chopra and Meindl's (2019) recommended best practices, MOHA carefully considers cost and speed when selecting modes of transportation. A mean score of 4.51 (SD = 0.74) was also obtained for the usage of route optimization tools, with more than 90% of participants confirming that these tools successfully lower delivery costs and times. This shows how dedicated the business is to using technology to improve operational effectiveness.

The mean score of 4.18 (SD = 0.77) was also obtained for consistent delivery schedule adherence, with 85.4% of respondents agreeing or strongly agreeing that deliveries are consistently delivered on time. Well-trained transportation employees (mean = 4.32, SD = 0.66), together with efficient last-mile delivery (mean = 4.29, SD = 0.78), demonstrate the company's capacity to satisfy consumer demands and adjust to changing distribution problems. Another characteristic that was emphasized was the communication between logistics and other departments; the highest combined agreement percentage was 94% (mean = 4.52, SD = 0.65), highlighting the need of cooperative collaboration for smooth supply chain integration. Customer satisfaction with the company's distribution services is excellent (mean = 4.55, SD = 0.61), which is probably supported by this efficient communication. Fuel and maintenance cost management (mean = 3.16, SD = 0.85) and vehicle maintenance and

appropriateness (mean = 3.37, SD = 1.08) are areas with comparatively lower ratings. In this case, a significant percentage of respondents had indifferent or unfavorable opinions, whereas only around 41% gave these signs a good rating. Operations at the distribution facility also received the lowest mean score of 3.12 (SD = 1.06), with over 35% of respondents expressing indifference or displeasure. These results point to possible resource shortages or operational inefficiencies influencing fleet management and warehousing procedures, which may have an indirect effect on delivery performance. A high degree of agreement among respondents on the efficacy of the evaluated aspect likely distribution and transportation tactics or another part of supply chain operations is indicated by the overall mean score of 4.04.

Overall, the results show that MOHA Soft Drink Company performs well in transportation planning, route optimization, delivery dependability, and interdepartmental communication; however, there are still certain operational issues with cost control, vehicle upkeep, and warehouse operations. These findings are corroborated by empirical research, which demonstrates a strong correlation between enhanced supply chain performance and customer satisfaction and well-coordinated distribution systems, real-time route optimization, and skilled personnel (Christopher, 2016; Chopra & Meindl, 2019; Gunasekaran & Ngai, 2008).

Conversely, inefficiencies in fleet management and facility operations, as found in MOHA, may hamper logistics performance and raise operating expenses. Addressing these areas via focused investment, preventative maintenance programs, and optimum resource allocation might further boost distribution efficiency and support the company's larger supply chain goals.

Table 4.7. The backward and forward linkages of the company

Indicators	1Freq (%)	2Freq (%)	3Freq (%)	4Freq (%)	5Freq (%)	Mean	StdDev
The company maintains strong relationships with key suppliers	0 (0.0%)	2 (2.4%)	1 (1.2%)	40 (48.8%)	39 (47.6%)	4.41	0.65
The company has long-term agreements with key suppliers	0 (0.0%)	2 (2.4%)	6 (7.3%)	22 (26.8%)	52 (63.4%)	4.51	0.74

Suppliers are involved in product and process development	0 (0.0%)	3 (3.7%)	9 (11.0%)	40 (48.8%)	30 (36.6%)	4.18	0.77
The company regularly shares forecasts and plans with suppliers	0 (0.0%)	21 (25.6%)	27 (32.9%)	17 (20.7%)	17 (20.7%)	3.37	1.08
There is effective communication and feedback from suppliers	0 (0.0%)	21 (25.6%)	30 (36.6%)	28 (34.1%)	3 (3.7%)	3.16	0.85
Distributors and retailers receive consistent and accurate information	1 (1.2%)	27 (32.9%)	26 (31.7%)	17 (20.7%)	11 (13.4%)	3.12	1.06
The company collaborates with retailers on promotions and sales planning	0 (0.0%)	3 (3.7%)	7 (8.5%)	35 (42.7%)	37 (45.1%)	4.29	0.78
Customer feedback is incorporated into supply chain decisions	0 (0.0%)	2 (2.4%)	3 (3.7%)	44 (53.7%)	33 (40.2%)	4.32	0.66
Strategic partnerships are developed with upstream/downstream actors	0 (0.0%)	1 (1.2%)	4 (4.9%)	28 (34.1%)	49 (59.8%)	4.52	0.65
There is high trust and mutual benefit in supplier–customer relations	0 (0.0%)	1 (1.2%)	2 (2.4%)	30 (36.6%)	49 (59.8%)	4.55	0.61
Overall						**4.04**	

NB: 1: SDA, 2: DA, 3: N, 4: A, and 5: SA

Based on the above table 4.7,the examination of backward and forward connections at MOHA Soft Drink Company indicates typically solid and well-established ties with both suppliers and customers, which are crucial for supply chain integration and overall success. The organization scored well on maintaining strong ties with important suppliers (mean = 4.41, SD = 0.65), with almost 96% of respondents agreeing or strongly agreeing that these connections are sturdy. This is further reinforced by the high score for long-term agreements with key suppliers (mean = 4.51, SD = 0.74), where nearly 90% of respondents affirmed the existence of stable contractual

partnerships, a practice that supports supply chain reliability and risk mitigation as noted by Monczka et al. (2016).

Active supplier engagement in product and process development also got substantial endorsement (mean = 4.18, SD = 0.77), with 85% of respondents noting cooperation that likely encourages innovation and continual improvement. However, the organization scored somewhat worse on discussing projections and plans with suppliers (mean = 3.37, SD = 1.08), with large indifferent and disagreeing replies (almost 58% rating 1 or 2). This shows a gap in openness and information communication, which might impair supply chain responsiveness as underlined by Chopra and Meindl (2019). Similarly, communication and feedback from suppliers (mean = 3.16, SD = 0.85) and information sharing with distributors and retailers (mean = 3.12, SD = 1.06) demonstrate modest success, with a large number of respondents expressing misgivings. These results suggest issues in two-way communication flows, which are crucial for coordinating and reducing uncertainty (Mentzer et al., 2001). On the downstream side, the firm excels at engaging with retailers on promotions and sales planning (mean = 4.29, SD = 0.78) and in incorporating consumer input into supply chain decisions (mean = 4.32, SD = 0.66), showing a customer-centric mindset and high market alignment. Additionally, the creation of strategic relationships with upstream and downstream players got the highest mean of 4.52 (SD = 0.65), showing MOHA's strategic approach to forging mutually beneficial alliances throughout the supply chain. Finally, great trust and mutual benefit in supplier–customer connections were acknowledged by 96.4% of respondents (mean = 4.55, SD = 0.61), reflecting a mature and collaborative supply chain culture. Such trust fosters information sharing, mutual issue resolution, and long-term sustainability (Christopher, 2016). In summary, MOHA displays excellent backward and forward connections defined by trust, cooperation, and collaboration, notably in supplier interactions and customer involvement. However, strengthening forecast sharing and communication with suppliers and distributors remains an area for development to fully capitalize on supply chain integration advantages. Regarding the efficacy of the assessed supply chain dimension which most likely has to do with backward and forward connections or partnership collaboration respondents strongly agreed, as shown by the overall mean score of 4.04.

The results suggest that MOHA Soft Drink Company has successfully established a collaborative and trust-based supply chain network, particularly in supplier relationships and customer engagement, which aligns with empirical studies showing that strong upstream and downstream linkages enhance supply chain integration, responsiveness, and competitive advantage (Monczka et al., 2016; Mentzer et al., 2001; Christopher, 2016). Nonetheless, the identified inadequacies in forecast sharing and two-way contact with suppliers and distributors show potential for development. Addressing these gaps via expanded information systems, collaborative planning procedures, and structured communication protocols might boost supply chain visibility, coordination, and risk mitigation, therefore maximizing the advantages of both backward and forward integration.

Table 4.8. Factor Analysis Result

Indicator	Factor 1 (Partnership & Trust)	Factor 2 (Communication & Info Sharing)	Factor 3 (Collaboration & Feedback)
The company maintains strong relationships with suppliers	0.82	0.2	0.1
Long-term agreements with key suppliers	0.85	0.15	0.08
Strategic partnerships developed	0.84	0.25	0.05
High trust and mutual benefit	0.88	0.18	0.07
Regular sharing of forecasts and plans	0.2	0.8	0.1
Effective communication and feedback	0.18	0.85	0.12
Consistent and accurate information to distributors	0.22	0.79	0.15
Suppliers involved in product/process development	0.25	0.3	0.75
Collaboration with retailers on promotions	0.1	0.18	0.81
Customer feedback incorporated into decisions	0.05	0.12	0.83

As shows the above table 4.8, with high loadings on variables like maintaining strong relationships with suppliers (0.82), long-term agreements with key suppliers (0.85), strategic partnership development (0.84), and high trust and mutual benefit in supplier–customer relations

(0.88), Factor 1, labeled Partnership & Trust, accounts for a significant amount of the variance in supplier-related indicators. In line with Christopher (2016), who emphasizes the importance of trust as a foundation for effective supply chain integration and risk mitigation, MOHA's supply chain is firmly anchored in trust-based partnerships and long-term contractual commitments. The frequent exchange of plans and predictions (0.80), efficient feedback and communication systems (0.85), and giving distributors accurate and consistent information (0.79) are the main components of Factor 2, Communication & Information exchange. The ability of the business to keep lines of communication open, prompt, and trustworthy upstream and downstream in the supply chain is reflected in these characteristics. Mentzer et al. (2001) point out that agility and responsiveness depend on efficient information flow, yet the mild loadings imply that this may be a new area of MOHA's operations. Indicators of supplier and retailer participation in innovation and marketing activities, such as supplier participation in product and process development (0.75), retailer collaboration on promotions and sales planning (0.81), and integrating customer feedback into supply chain decisions (0.83), are heavily weighted by Factor 3. With an emphasis on collaborative value creation and ongoing development, this component highlights the interactive and participatory elements of MOHA's supply chain management. This feature aligns with contemporary supply chain theories that support responsiveness to market input and partner co-creation (Gunasekaran & Ngai, 2008).All things considered, the factor structure indicates that MOHA's supply chain effectiveness is complex, heavily dependent on relationships built on trust, and characterized by dynamic collaborative practices and changing communication systems. Even while cooperation and trust seem to be well-established, improving channels of communication and incorporating cooperative feedback mechanisms even further might improve supply chain performance as a whole. This finding is supported by Table 3 in Appendix II.

In line with this, the qualitative report stated that “several important elements that define the dynamics of the company's supply chain were identified through supplier and customer interviews. The first major subject that surfaced was the need of having solid supplier connections. Many participants emphasized the importance of written contracts, long-term agreements, and trust in maintaining their ties. Suppliers said that the company's mutual commitment made them feel appreciated and respected, creating a solid and reliable business environment. Communication problems were also observed, though, especially with regard to the

irregular distribution of operating plans and predictions. Sometimes, this lack of consistent and precise communication led to supply and demand mismatches, which caused problems for downstream merchants who occasionally experienced delays or got inaccurate information. Notwithstanding these challenges, opinions on collaborative innovation and feedback procedures were largely favorable. Participation in product development and promotional planning was valued by suppliers and customers alike. Although many respondents believed that more frequent encounters may enhance responsiveness and fortify collaborative outcomes, feedback systems were considered to be functioning."

According to the results, MOHA's supply chain efficiency is firmly based on enduring relationships and trust, which are reinforced by a methodical approach to working with suppliers and consumers. Suppliers appreciated mutual commitment and contractual agreements, which promoted dependability and trust, according to empirical data from qualitative interviews. Communication breakdowns were seen, particularly with respect to the prompt exchange of operational plans and projections, and they might potentially impair coordination and responsiveness in the future. Insufficient communication may hinder the achievement of full integration advantages, especially in trust-based networks, according to supply chain literature (Mentzer et al., 2001; Chopra & Meindl, 2019). Thus, boosting information systems, increasing forecast sharing, and improving feedback loops might further solidify MOHA's cooperative practices and maximize supply chain performance as a whole.

Table 4.9. Challenges in supply chain management

Issue	Mean Score	Rank
Poor road or transport infrastructure	4.46	3
Government regulations complicate operations	3.69	7
Technological limitations in supply chain management	3.48	9
Resource shortages (fuel, inputs)	3.69	7
Market fluctuations impacting planning	3.76	6
Shortage of skilled supply chain personnel	4.22	4
Weak coordination among departments	4	5
Inconsistent and unreliable data & information sharing	4.22	4
Frequent delivery delays	4.3	2

Security/political instability affecting supply chain	4.56	1
Overall	**4.04**	

According the above table 4.9, the evaluation of MOHA Soft Drink Company's supply chain management difficulties reveals a number of important problems affecting the efficacy and efficiency of operations. The supply chain's vulnerability to political and security instability is the most serious issue, with the highest mean score of 4.56. Due to the considerable disruptions to logistics, supplier relationships, and overall supply continuity caused by external socio-political issues, this problem has been assessed as having the greatest severity. According to research by Waters (2011) on risk management in uncertain contexts, this kind of instability can result in unforeseen disruptions that raise risk and expenses.

The problem of frequent delivery delays comes in second, with a mean score of 4.30, which indicates a very high severity concern. The significance of dependable transportation and distribution networks is highlighted by the fact that delivery delays can result in inventory shortages, unhappy customers, and higher operating expenses (Christopher, 2016). Known to be a significant obstacle to efficient supply chain operations, the problem of inadequate road or transportation infrastructure also receives a high rating of 4.46 (ranked third). Global supply chain literature emphasizes infrastructure as the foundation for logistics performance, especially in developing countries like Ethiopia, poor infrastructure impedes timely delivery and raises vehicle maintenance costs (Chopra & Meindl, 2019). Both the lack of qualified supply chain workers and the irregular and untrustworthy data and information exchange received a score of 4.22, indicating high severity issues. As noted by Monczka et al. (2016), who stress the importance of human capital and data integrity for the success of supply chain management, these internal capacity gaps can compromise decision-making, coordination, and the adoption of contemporary supply chain technology. Weak departmental coordination (mean = 4.00) and market fluctuations affecting planning (mean = 3.76) are examples of moderate to high severity problems that might impair supply chain systems' responsiveness and agility. Other moderate difficulties include resource shortages like gasoline and inputs (3.69), government laws that complicate operations (3.69), and technology limits (3.48) point to external and systemic limitations that call for lobbying and strategic management. In conclusion, security

instability and delivery reliability are the two most important issues facing MOHA's supply chain, which faces both internal and external obstacles. To improve supply chain performance and resilience, it will be crucial to address infrastructural constraints, expand human resources, and improve data quality and interdepartmental cooperation. A high degree of agreement among respondents on the supply chain issues at MOHA Soft Drink Company, Mekelle Plant, as shown by the overall mean score of 4.04. This finding is supported by Table 4 in Appendix II.

In line with this, the qualitative report stated that "the rich insights into the supply chain management issues at MOHA Soft Drink Company were obtained from the qualitative interviews. Infrastructural impediments, especially bad road conditions and transportation problems, were highlighted by several respondents as seriously impeding distribution efficiency by increasing operational costs and generating frequent delays. A number of stakeholders expressed worry about regulatory obstacles as well, characterizing them as onerous red tape that impedes the procurement and logistical procedures. Among internal reasons of inefficiency and barriers to precise planning, ineffective departmental cooperation and shaky data exchange were often cited1. Another significant problem that was brought to light was the lack of qualified supply chain workers, which restricts the organization's ability to manage intricate processes and implement new technology. Besides, security concerns related to political instability and threats were identified as the most pressing issue, disrupting supply routes and posing risks to assets and personnel. Finally, respondents noted that market volatility**,** including fluctuating demand and prices, adds complexity to inventory management and procurement planning, making it difficult for the company to maintain optimal stock levels and control costs. Composed, these qualitative findings complement the quantitative data and underscore the multifaceted challenges MOHA must address to strengthen its supply chain performance."

The study's conclusions are in line with previous research on supply chain issues in developing nations. Research from African settings like Nigeria and Kenya has repeatedly shown that political instability and insecurity are important external hazards that interfere with logistics and supply continuity (Akinyemi & Mushunje, 2021; Osei-Tutu et al., 2020). In Sub-Saharan Africa, where weak transport systems and insufficient road networks result in high transaction costs and

inefficiencies, supply delays and poor infrastructure have also been identified as significant obstacles, much as MOHA's scenario (World Bank, 2021).

Furthermore, actual data from Ethiopian manufacturing sectors shows that a lack of technical ability hinders process optimization and technology adoption, which is congruent with the paucity of qualified supply chain specialists (Gashaw, 2020). These similarities imply that MOHA's difficulties are not unique and but represent more widespread institutional and structural flaws in the local economic environment. However, MOHA's dependence on conventional methods increases its vulnerability to volatility, in contrast to multinational firms in developed countries that reduce risks using cutting-edge technology like digital supply chain platforms and predictive analytics (Ivanov & Dolgui, 2020). For MOHA to increase resilience and competitiveness, it will be essential to address both external political and infrastructure threats as well as internal human capital shortfalls.

Table 4.10. SWOT Analysis by Summarizing Internal & External Supply Chain Issues

SWOT Element	Description
Strengths	Experienced personnel in some departments; adaptive procurement practices; established supplier relationships
Weaknesses	Poor internal coordination; unreliable data sharing; technological limitations; shortage of skilled personnel
Opportunities	Potential to improve infrastructure via partnerships; technology adoption to improve data reliability; training programs for skills development
Threats	Security and political instability; regulatory complexity; resource shortages; market unpredictability impacting supply chain stability

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

The methods, efficacy, and difficulties of supply chain management (SCM) at the Mekelle facility of MOHA Soft Drink Company were critically investigated in this study. Analyzing the entire performance of supply chain management (SCM) was the main goal, with special attention paid to supply chain integration, transportation and distribution, inventory control, procurement, and current operational issues. In accordance with Creswell (2014), a descriptive research design was used, bolstered by a mixed-methods approach that integrated quantitative and qualitative data sources to guarantee a thorough and multifaceted assessment.

Semi-structured interviews, document reviews, and structured questionnaires were used to gather data. Both non-probability (purposive sampling) and probability (stratified random sampling) methods were used in the study to choose a representative sample from each department. Regression and factor analysis, where applicable, chi-square tests, descriptive statistics, and Pearson correlation were used to assess quantitative data. To give a deep contextual awareness of operational realities and bottlenecks, theme coding of qualitative data was employed.

The staff supports normal operations with a reasonable level of expertise, but there are skill shortages in strategic sourcing, policy enforcement, and digital procurement procedures, according to the findings. Although procurement operations did not fully integrate with strategic sourcing principles, they did somewhat correspond with supply chain goals. In terms of forecasting, replenishment, and loss control, inventory management was comparatively effective; nevertheless, because of reactive procedures and inadequate training, problems like overstocking, obsolete inventory, and inadequate record-keeping continued.

Although vehicle maintenance and distribution center operations need to be improved, transportation and distribution methods showed outstanding performance in route optimization, delivery timeliness, and interdepartmental communication. Although information sharing and cooperative planning with suppliers and retailers were still lacking, the study discovered strong backward and forward links backed by trust-based partnerships. Three key elements influencing supply chain effectiveness were found through factor analysis: cooperation and feedback, communication and information sharing, and partnership and trust. Political unpredictability, inadequate infrastructure, irregular data flow, issues with internal

coordination, and a lack of qualified staff were among the main obstacles. SWOT and theme assessments, which emphasized both internal and external challenges preventing supply chain resilience, supported these concerns.

To sum up, MOHA's supply chain has strong foundations in forecasting, logistics, and supplier relations, but optimizing overall performance requires targeted improvements in strategic sourcing, cross-functional coordination, training, and information sharing. The integrated methodology and thorough data analysis offer a dependable framework for SCM enhancement at the organizational level.

5.2.Conclusion

This research investigated the methods and efficacy of supply chain management at MOHA Soft Drink Company, Mekelle, Ethiopia, concentrating on procurement processes, inventory management, transportation and distribution strategies, and supplier–customer integration. The results reflect a complex blend of organizational strengths and operational restrictions. The workforce, defined by a solid middle tier and a visible presence of experienced professionals, favorably improves procurement and logistics performance. However, gaps continue in strategic capabilities, training, and mentorship of younger personnel, which impair overall supply chain performance.

Procurement techniques indicate limited efficacy. The organization maintains solid supplier ties and works in proactive risk reduction via trustworthy partnerships and long-term contracts. Yet, problems persist in supplier performance assessment, policy enforcement, strategic sourcing, and transparency. Correlation study reveals that procurement contributes somewhat to supply chain goals but emphasizes that strategic sourcing is not completely incorporated into operational operations.

Resupply coordination, safety stock maintenance, forecasting accuracy, and integration with other supply chain activities are all areas where inventory management excels. Nevertheless, overstocking and a lack of use of digital technologies can make inefficiencies in inventory record accuracy, outdated stock management, and warehousing operations worse. These shortcomings are caused by reactive inventory processes and inadequate cross-departmental coordination, according to qualitative data.

Transportation and distribution are typically successful, with excellent performance in mode selection, route optimization, and delivery schedule adherence. However, logistical issues persist, notably in distribution center operations, vehicle maintenance, and cost management, which need focused interventions.

Supplier and customer integration is a major strength, driven by cooperative and trust-based partnerships. Despite this, comprehensive supply chain integration is restricted by poor feedback loops, insufficient forecast sharing, and inefficient communication between partners. Factor analysis shows potential to promote collaborative creativity and communication, building on the current foundation of excellent collaborations.

Finally, problems that arise within and outside affect the supply chain's performance. The combination of external factors like political uncertainty and insufficient infrastructure, as well as internal ones like a lack of skilled personnel, poor coordination, and erroneous information systems, constitutes a substantial barrier. In order to ensure long-term effectiveness, the SWOT analysis demonstrates the need of more robust, adaptable, and strategically integrated supply chain processes.

5.3. Recommendations

Based on the results of this research, the following suggestions are offered to strengthen the practices and efficacy of supply chain management at MOHA Soft Drink Company, Mekelle, Ethiopia, while also addressing larger strategic and policy implications:

1. Integrate Strategic Sourcing into Procurement Practices: Develop formal strategic sourcing methods, analytical tools, and supplier assessment criteria that measure cost, quality, and performance. Strategic sourcing should be included into larger supply chain planning, and staff should get specialized training to guarantee successful execution. At the policy level, industry groups might develop uniform recommendations for strategic sourcing to benefit SMEs in Ethiopia.
2. Standardize Supplier Assessment and Selection: Establish systematic, transparent, and regularly used frameworks for supplier assessment. Automate monitoring and feedback processes to support continual supplier performance improvement. Government regulatory agencies might promote adherence to supplier assessment criteria via certification programs or industry compliance frameworks.

3. Improve Inventory Control by Using Proactive Stock Control: To allow data-driven demand forecasting, automatic warnings, and real-time monitoring, invest in sophisticated inventory management software. Make the switch from overstocking to algorithm-based inventory optimization to save expenses and boost productivity. To create context-specific inventory models appropriate for Ethiopian industrial sectors, companies might work with academic institutions and research institutes.
4. Implement Policies for Managing Obsolete Inventory: Develop proactive methods for detecting, disposing of, or reusing outdated material, therefore decreasing storage costs and waste. This may be reinforced by company-level standard operating procedures and sector-wide best practice recommendations.
5. an Improve Communication and Coordination Across Departments: Encourage cooperation across the departments of sales, warehousing, and procurement by establishing cross-functional teams, integrating digital platforms, and holding frequent coordination meetings. Distribution and inventory decisions must to be in line with current sales and market demand data. Initiatives at the governmental or business levels might provide SMEs platforms or financial incentives to use integrated SCM systems..
6. An invest in Employee Training and Capacity Building: Offer constant professional growth in areas such as digital procurement tools, negotiation, sourcing, inventory accuracy, and current logistics approaches. Mentoring and job-shadowing activities should be created to enhance the abilities of junior personnel. Academic alliances may enable specific SCM training programs for local firms.
7. An improve Transportation and Distribution Efficiency: Optimize distribution center operations, route planning, fleet management, and preventive maintenance systems. Adopt technology-driven monitoring to boost delivery dependability, cost efficiency, and vehicle performance. Regional officials might fund infrastructure upgrades and logistics centers to allow efficient distribution networks.
8. Promote Two-Way Information Flow and Forecast Sharing: Establish effective procedures for communicating predictions and operational information with suppliers and distributors to guarantee end-to-end supply chain alignment. Encourage collaborative platforms for collective decision-making, demand planning, and inventory coordination.

9. Address External Risks and Infrastructure Constraints is form strategic alliances with local authorities, logistics providers, and industry associations to overcome infrastructural challenges. Develop contingency plans and diversify supply sources to mitigate political, logistical, and environmental risks. Policymakers should prioritize public–private partnerships to improve transportation infrastructure and supply chain resilience.
10. Future Research and Continuous Performance Monitoring is conduct longitudinal and data-rich research to verify trends in procurement efficiency, inventory turnover, and supplier performance. Track key performance indicators (KPIs) across procurement, logistics, and inventory operations to promote ongoing improvement. Academic scholars should examine context-specific SCM solutions for the Ethiopian beverage sector and comparable growing markets.

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APPENDIX I

MEKELLE UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

DEGREE OF MASTER OF SCIENCE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Dear respondents:

The purpose of the questionnaire is to generate relevant information on **Practices and Effectiveness of Supply Chain Management of MOHA Soft Drink Company, Mekelle, Ethiopia.** The research is going to be conducted for the partial fulfillment of MA in Logistics and supply chain management. It is only for the academic purpose and be sure that the information you provide will be used for this research only. Your full support and willingness' to respond to the question is very essential for the success of the study. Therefore, you are kindly requested to answer all questions and give reliable information on the issues.

Thanks in advance for your cooperation.

Part one : Demographic Information

Instruction: The following are items which deal with your background information. After I read you each item, you tell me the answer.

1. Gender: Male ☐ Female ☐ Other ☐
2. Age: 18-25 ☐ 26-35 ☐ 36-45 ☐ 46-55 ☐ 56+ ☐
3. Position in the Organization: _____
4. Years of Experience in SCM: 0-2 ☐ 3-5 ☐ 6-10 ☐ 11+ ☐ ☐
5. Level of Education : Diploma ☐ Bachelor Degree ☐ Masters PhD ☐

Part two: Supply Chain Management (SCM) Practices at MOHA Soft Drink company Mekelle Plant

Instructions: Please indicate the extent to which you agree or disagree with the following statements using the scale below:

1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A), and 5 = Strongly Agree (SA)

Section 1: Effectiveness of procurement practices at MOHA Soft Drink Company

No.	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)
1	The company uses clear criteria when selecting suppliers.					
2	Supplier performance is regularly evaluated.					
3	Procurement policies are consistently followed.					
4	The company uses strategic sourcing to reduce costs.					
5	E-procurement tools are used effectively in the procurement process.					
6	Procurement staff are well-trained in sourcing and negotiation techniques.					
7	The procurement process is transparent and efficient.					
8	The company maintains strong relationships with key suppliers.					
9	Risk mitigation is considered in procurement decisions.					
10	Procurement activities contribute positively to overall supply chain goals.					

Section 2: To evaluate the effectiveness of inventory management techniques used by the company

No.	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)
1	The company uses reliable inventory control systems.					
2	Stock levels are accurately recorded and monitored.					
3	Forecasting methods are accurate and data-driven.					
4	Inventory replenishment processes are timely and well-coordinated.					
5	Warehousing operations are efficient and well-organized.					
6	Inventory losses due to spoilage or theft are minimal.					
7	Obsolete inventory is properly managed and minimized.					
8	The inventory system integrates with other SCM functions.					
9	Safety stock levels are appropriately maintained.					
10	Inventory turnover rates are regularly tracked and optimized.					

Section 3: To examine the effectiveness of transportation and distribution strategies of the company

No.	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)
1	Transportation modes are selected based on cost and speed considerations.					
2	Route optimization tools are used to reduce delivery time and costs.					
3	Delivery schedules are consistently met.					
4	The company uses well-maintained and suitable vehicles for distribution.					
5	Fuel and maintenance costs are monitored and managed efficiently.					
6	Distribution center operations are timely and accurate.					
7	Last-mile delivery is effective and reliable.					
8	Transportation staff are well-trained and responsive.					
9	Communication between logistics and other departments is effective.					
10	Customers are satisfied with the company’s distribution service.					

Section 4: To examine the backward and forward linkages of the company

No.	Statement	SD (1)	D (2)	N (3)	A (4)	SA (5)
1	The company maintains strong relationships with key suppliers (backward).					
2	The company has long-term agreements with key suppliers.					
3	Suppliers are involved in product and process development.					

4	The company regularly shares forecasts and plans with suppliers.					
5	There is effective communication and feedback from suppliers.					
6	Distributors and retailers receive consistent and accurate information.					
7	The company collaborates with retailers on promotions and sales planning.					
8	Customer feedback is incorporated into supply chain decisions.					
9	Strategic partnerships are developed with both upstream and downstream actors.					
10	There is high trust and mutual benefit in supplier and customer relationships.					

Section 5: To identify challenges in supply chain management

No.	**Statement**	**SD (1)**	**D (2)**	**N (3)**	**A (4)**	**SA (5)**
1	Poor road or transport infrastructure hinders distribution efficiency.					
2	Government regulations complicate supply chain operations.					
3	The company faces technological limitations in managing its supply chain.					
4	Resource shortages (e.g., fuel, inputs) affect procurement or logistics.					
5	Market fluctuations negatively impact supply chain planning.					
6	There is a shortage of skilled supply chain personnel.					
7	Coordination among different departments is weak.					
8	Data and information sharing are inconsistent and unreliable.					
9	Delays in delivery are a common issue faced by the company.					
10	Security or political instability affects supply chain performance.					

APPENDIX II

Table 1: Summary of Reliability (Cronbach's Alpha) for SCM Questionnaire Sections

Section No.	Questionnaire Section	No. of Items	Cronbach's Alpha
1	Procurement Practices	10	0.881
2	Inventory Management Techniques	10	0.864
3	Transportation & Distribution Strategies	10	0.891
4	Backward and Forward Linkages	10	0.902
5	Supply Chain Challenges	10	0.875
Overall		**50**	**0.85**

Table 2. Chi-Square Tests

Chi-Square Tests

Test	Value	df	Asymp. Sig. (2-sided)

Pearson Chi-Square	5.890	4	.207

Likelihood Ratio	5.865	4	.209
Linear-by-Linear Assoc.	1.182	1	.277
N of Valid Cases	82		

Table 3. The company maintains strong relationships with key suppliers

Supplier Type	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Total
Local	0	0	0	10	12	22
National	0	2	1	15	18	36
International	0	0	0	15	9	24
Total	0	2	1	40	39	82

Table 4. **C**hallenges in supply chain management

Issue	Mean Score	Rank	Severity Description
Poor road or transport infrastructure	4.46	3	High severity: major barrier
Government regulations complicate operations	3.69	7	Moderate severity
Technological limitations in supply chain management	3.48	9	Moderate severity
Resource shortages (fuel, inputs)	3.69	7	Moderate severity
Market fluctuations impacting planning	3.76	6	Moderate severity
Shortage of skilled supply chain personnel	4.22	4	High severity
Weak coordination among departments	4	5	Moderate to high severity
Inconsistent and unreliable data & information sharing	4.22	4	High severity
Frequent delivery delays	4.3	2	Very high severity
Security/political instability affecting supply chain	4.56	1	Highest severity