

**LOGISTICAL PACKAGING AND OPERATIONAL
PERFORMANCE: A CASE OF COCA COLA BOTTLING
COMPANY, NAIROBI COUNTY, KENYA**

BY

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DECLARATION

My original research project has not been submitted for a degree in any other university.

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DEDICATION

My research project is dedicated to my family, whose unwavering love, support, and encouragement have been the basis of my academic journey. Their sacrifices, understanding, and belief in my abilities have fueled my determination to pursue higher education and strive for excellence.

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LIST OF ABBREVIATIONS

CABI	Centre for Agriculture and Bioscience International
CCBA	Coca-Cola bottling company Beverages Africa
CSD	Carbonated Soft Drink
LTD	Limited
MSE	Micro and Small Enterprises
Mt.	Mountain
PET	Polyethylene Terephthalate
RBT	Resource-Based Theory
SEM	Structural Equation Modeling
SPSS	Statistical Package for Social Science
U.S.	United States
WCMP	Working Capital Management Package

ABSTRACT

Coca-Cola bottling company has adopted logistical planning in its attempt to streamline its operations and stay competitive in the highly competitive industry. The purpose of this study was to determine how logistical packing affects the operational performance of the Coca-Cola bottling company in the County of Nairobi, Kenya. Specifically, it sought to establish the effect of packaging design on the operational performance; determine the effect of intralogistics on the operational performance; establish the effect of packaging systems on the operational performance; and determine the effect of transport volume on the operational performance of the Coca-Cola bottling company. The study adopted resource-based view and the systems theory. The study's research design was cross-sectional in nature. Participants were Kenyan Coca-Cola bottling company employees. The study targeted senior employees: general management, procurement and logistics, distribution and stores, marketing and operation. Two employees were targeted from each department. The sample population, therefore, was ten employees in the five departments. A questionnaire was used to gather the information. The gathered information was evaluated using descriptive and inferential statistics, multiple regressions was used. For data analysis, SPSS Version 25 was used in generation of statistics. From the findings on packaging design, the respondents agreed that their organization adopted well structure and quality packaging of different shapes for their products which was appealing to the customers. On intralogistics, the study found that the respondents agreed that their organization information and conveyor systems in place. There was team coordination and management support in logistical packaging within the organization. For packaging systems, the respondents agreed that their organization had effective operational packaging systems. For transport volume, the respondents agreed that their organization transported large volumes of products through a defined route of high frequency. The respondents agreed that the operational costs were high in their organization. They also indicated that the operational performance was poor. From the model summary, R-value (correlation coefficient) was 0.868 with R-squared value of 0.754. The coefficient for packaging design was 0.251; intralogistics was 1.090; packaging systems was 0.827; while transport volume had coefficient of -0.497. The study concludes that packaging design, intralogistics and packaging systems has positive effect on operational performance of the Coca-Cola bottling company, Kenya. However, transport volume has a negative effect on operational performance of the Coca-Cola bottling company, Kenya. This study recommends improved packaging design, intralogistics and packaging systems within Coca-Cola bottling company, Kenya. The study also recommends the reduction of the transport volume of the Coca-Cola bottling company, Kenya. Further research is recommended on other influencers of operational performance, different measure of variables and other companies other than Coca-Cola bottling company, Kenya.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Numerous businesses have found Logistical packaging as a critical factor in operational performance (Meherishi, Narayana & Ranjani, 2019). Operational performance is the actual output measured against organizational goals and objectives. The logistical packaging activities have been considered globally as one of the core competencies that create customer value and thus resulting in improved performance (Harding, Moons & Du, 2021). Vöröskői and Böröcz (2016) view logistical packaging as a critical element in the process of physical distribution of goods. Logistical packaging enhances the system's effectiveness and efficiency of a company's supply chain. Packaging design requirements, intralogistics, packaging systems and transport volume are the key elements of logistical packaging which are worth studying (Mikkola, 2021).

The resource-based and systems theories served as the foundation for this investigation. Resource-based theory by Wenefeldt (1984) asserts that a company cannot be considered to be competitively superior to the other competitors who are in the same field on the ground of how much assets they have accumulated, but solely depending on how well they distribute, control, and utilize the resources. According to Dunlop's systems theory, published in 1958, an organization is a complex network of dynamically linked and interrelated systems that involves the environment in which it operates as well as the inputs, processes, outputs, and feedback. The notion states that the subsystems cooperate to improve the overall company's survival and performance. The theories enabled the researcher to establish how logistical packaging influence the operational performance of Coca-Cola bottling company.

Coca-Cola bottling company Kenya, has engaged in logistical packaging in its business operations. However, the company has shown poor logistical packaging in recent years. This has been shown by product spills while in transit and packaging tears. The company has also shown deteriorating performance in recent years. The company has experienced reduced market share and a reduction in profit and sales revenue. This investigation seeks to determine the result of logistical packaging based on operational performance of the Coca-Cola bottling company in Nairobi County, Kenya.

1.1.1 Logistical Packaging

Logistical packaging is the planning and organizing of packaging to ensure that packaging is done effectively within an organization. Logistics packaging is the planning, management and implementation processes to move and store goods (Waters, 2011). Logistics packing is a planned process for preparing commodities for handling, transportation, distribution, storage, sale, consumption, and recovery, reuse, or destruction. This system also maximizes consumer value, sales, and profit (Saghir, 2002). It also relates to planning and organizing packaging to ensure that packaging is done effectively (Hellström & Nilsson, 2011). Logistics packaging refers to the science, enclosing and protecting things for transit, storage, sale, and use through art and technology art, and technology of enclosing and safeguarding goods for transit, storage, sale, and use (Karpun, 2020). It is also the process of designing, evaluating and production of packages (Tilokavichai et al., 2012).

Ghoumrassi and Tigu (2018) indicated that logistical packaging was measured through volume of goods transported within a supply chain, packaging design requirements and transport volume. Grant, Trautrim and Wong (2015) indicated three interrelated elements

of logistical packaging: communication, protection and utility. As opposed to that, Khouri et al. (2018) measured logistical packaging in terms of trade volume, intralogistics and product designs. However, Karpun (2020) measured logistical packaging in relation to logistics systems, packaging systems and transportation volume. This study adopted packaging design requirements, intralogistics, packaging systems and transport volume were considered as the facets of logistical packaging.

Operational performance is impacted by packaging's impact on supply chain logistical activity expenses. Logistics including service charges are related in direct to the density and package size while maintaining costs depend on the loads. Packaging influences logistic management through inventory control, customer focus, and environmental friendliness. Inventory control relies on the accuracy of the identification system. On the other hand, customer service focuses on packages, protecting and securing products, and how it is easy to open the product, display it, and sell it. Finally, the environmental effect depends on the materials, processing techniques, and packaging recycling (Oduma & Shale, 2019).

1.1.2 Operational Performance

According to Guta (2016), operational performance refers to presenting a firm's operational output, measured against the expected output from the operations. Operational performance refers to a business unit's ability to work together in a synergistic manner to boost production. (Kaydos, 2020). As a result, it shows the degree to which various firm departments collaborate to achieve specific corporate objectives. Evaluating outcomes in relation to assets employed to obtain such results is defined by Lebas and Euske (2002) as operating performance. On the other hand, Voss, Åhlström and Blackmon (1997) defined

operational performance as the ability of a company to deliver products or services to customers while following budget-friendly practices. It shows how well business departments collaborate to accomplish specific business goals. It is a critical aspect of strategic management; therefore, CEOs must evaluate their companies' operational performance to determine whether strategic adjustments need to be made.. It is an important criterion for investors to decide whether to invest in a company or not. It also serves as a crucial marker for management and other stakeholders to determine whether or not the company is progressing in the desired direction (Richard et al., 2009). An organization's operational performance is critical because it enables the management to know their achievements of the organizational goals.

Operational performance may be measured in different ways. Most managers examine measures such as transportation costs, inventory costs, delivery time, quality of the products supplied and sales. Operating ratios, return on assets, and return on equity can all be used to gauge operational performance. It is also quantified in terms of delivery lead time, customer satisfaction, and supply chain costs. It was measured by way of inventory costs, supply chain costs, customer satisfaction, and delivery lead time.

1.1.3 Coca-Cola Bottling Company

In 1886, Atlanta pharmacist Dr. John S. Pemberton was inspired by his curiosity to develop a soft drink with a distinctive flavor that could be sold at soda fountains. This was the beginning of the Coca-Cola bottling firm. The beverage company set up shop in Kenya in 1948. Coastal Bottlers, Almasi Beverages, and CCBA Kenya (Coca-Cola bottling company Beverages Africa) are the company's current bottling partners that directly placed more

than 10,000 persons in employment. The roadmap of Coca-Cola bottling company starts with the company mission, which is to renew the world, arouse feelings of happiness and hope, as well as to add value and affect change. The company aimed introducing a portfolio of premium beverage brands that anticipate consumer needs is part of the company's aim to become a fantastic workplace where workers are inspired to do their best work. and meet consumer needs and wants; to develop a fruitful network of suppliers and clients through which we may produce value that is advantageous to both parties; to be a responsible corporate a person of influence who contributes to sustainable communities; maximize long-term shareholder return while being a good corporate citizen. Leadership, cooperation, accountability, the company's guiding ideals are excellence, diversity, and passion. Coca-Cola bottling company is a beverage manufacturer. More than 200 nations throughout the world are recipients of its product sales. In addition to creating and supplying syrups, bases, and concentrates to bottling facilities, The Coca-Cola bottling corporation is in charge of consumer brand marketing and owns the brands. It is leader in the Carbonated Soft Drink (CSD) industry, with over 96% of the market share

(CABI, 2021). The company mainly deals with brands in Kenya, including Coca-Cola, Fanta, Sprite, Krest and other sparkling soft drinks. In the section on dehydration, they offer Dasani, and in the nutrition section, they offer brands like Minute Maid. The company has four factories in Kenya so far, namely, Coca-Cola Co of Nairobi Ltd, Equator Bottlers, Coca-Cola Africa and Coca-Cola holdings ltd.

In its packaging, Coca-Cola bottling company has faced various challenges which have contributed to the global beverage manufacturer's market share declining. The company took so long to introduce bigger packages for their beverages which led to competitors

gaining market share within the industry (CABI, 2021). The company has been using small packages which made the consumers feel overloaded with packages when they needed to buy the beverages in large quantities. The company also faced a challenge in their packaging due to the lack of uniformity which led to the brand not standing out in terms of packaging. The company also faced the challenge of breakages in their packages due to the adoption of glass bottles. The consumers felt that the glass packages were inferior in a way (CABI, 2021).

Coca-Cola bottling company adopts unique packaging in an attempt to appeal to the customers in the target market. The company undertakes logistical packaging practices which have enabled the company to work with various bottling companies like Coca-Cola bottling company Bottling Co of Nairobi Ltd, Coastal bottlers, Equator Bottlers, Kisii bottlers, and Mt. Kenya bottlers. These bottling companies handle the bottling of the Coca-Cola bottling company brands. The bottling has been directed towards enhancing operational performance through increased sales, customer base and profitability through reduced production and packaging costs.

Logistical packaging is essential to manufacturers like Coca-Cola bottling company.

Logistical packaging helps to ensure that Coca-Cola bottling company products arrive undamaged at their end location, saving the company time and money. Logistical packaging also provides essential information to those transporting Coca-Cola bottling company products and raw supplies and to the end customer of the business's goods. Logistical packaging in Coca-Cola bottling company would result in higher efficiency and reduced costs, more innovative use of warehouse space, increased customer and supplier satisfaction, and an increased client satisfaction. Logistical packaging also improves

company performance through reduced costs and efficient packaging. Reduced packaging costs would lead to a higher net income reflecting increased profitability. Logistical packaging would also enhance market share through increased customer satisfaction and loyalty.

1.2 Research Problem

Logistic packaging plays a crucial role in helping firms function better. (Akumu, 2020). A crucial element that could improve performance metrics is logistical packaging. (Zheng et al., 2009). Logistical packaging happens through reduced packaging costs, increased customer satisfaction and effectiveness in the packaging process. According to resource-based theory. A capability that enables businesses to use the current resources efficiently is logistical packing. Logistical packaging, in turn, enhances operational performance. According to Hellström (2007), logistical packaging is crucial for manufacturing firms seeking to experience a turnaround through excellent performance. The researcher noted that manufacturers who adopt logistical packaging in their business operations experience the improved performance through market share, sales revenue and profitability. Improved performance is brought about by increased efficiency, reduced costs, logistics effectiveness and customer satisfaction.

Coca-Cola bottling company undertakes logistical packaging in its business operations. Roughly 45 per cent Plastic bottles (mainly PET) made up the majority of Coca-packaging Cola's in 2020, followed by aluminum and steel cans, which made up 25% of the company's packaging mix. This is done so that their products stand out in packaging, with consumers easily noticing the product. At the same time, shopping, and then they are more likely to buy products with attractive packaging like that of Coca-Cola bottling company. Despite

this, Coca-Cola bottling company faces numerous challenges ranging from high product returns due to damages, wrong deliveries, and environmentally unfriendly packaging materials, indicating challenges in poor logistical packaging adopted by the company. Coca-Cola bottling company has been experiencing challenges in its performance. The performance challenges have resulted from the competition from other players like Pepsi, who have come up strongly with unique and attractive packaging. The company has experienced a reduction in the market share from 43.7% in 2018 to 42.8% in 2020. Further, in 2020, Coca-Cola bottling company experienced a 1% decrease in sales revenue. Its annual earnings totaled \$19.581 billion. Down 13.54% from 2019. (Coca-Cola bottling company, 2021).

Studies done on logistical packaging and performance have produced conflicting results. Nassanga (2018). Based on the example of Century Bottling Company Limited, this essay examines the utilization of green supply chain strategies, environmental factors preservation one being Ugandan manufacturing enterprises (Coca-Cola bottling company). The study established that manufacturing companies adopted logistics packaging, which improved the company's performance. Nguyen (2019) studied the result of logistics services on a financial performance of the company in the textile industry in Vietnam. The study found that logistics packaging harmed performance due to its high costs.

On the other hand, Kimaro (2020) studied the result of both incoming and departing logistics. Operations on the interaction between suppliers and buyers, performance in Dar Es Salaam. The research showed that packaging logistics had an insignificant effect on organization performance. This creates the need to research how logistical packaging influences organization performance.

In Kenya, Nicholas, Anne, Ithinji and Bula (2016) studied reversing logistics methods and how they affect Kenyan food manufacturing companies' ability to compete. Despite this study focusing on manufacturing firms, the study is based on the concepts of competitiveness other than organization performance. The study was done on food manufacturers other than carbonated drinks manufacturers like Coca-Cola bottling company. 2019 study by Chungo and Anyieni looked at employee leave and the Rift Valley Bottlers' performance Kenya. The study looked at employee leave other than logistical packaging as per the current study. It was also based on one bottler under Coca-Cola bottling company other than the company itself. Ongombe (2012) studied gaining an edge over rivals and reversing logistics based on water bottlers in Nairobi and discovered that reverse logistics packaging reduced the costs of their competitors and thus made them more profitable. However, the study mainly focused on reverse logistics and failed to look at logistical packaging in totality. The reviewed studies showed research gaps that sought to be responded to the query: What is the outcome of logistical packaging on the operational performance of Coca-Cola bottling company Bottling Company in Nairobi County, Kenya?

1.3 Objective of the Study

1.3.1 General Objective

The overall goal was to determine how logistical packaging affects the operational performance of the Coca-Cola bottling company in Nairobi County, Kenya.

1.3.2 Specific Objectives were:

- i. To establish the impact of Packaging design on the operational performance of the

Coca-Cola bottling company in Nairobi County, Kenya.

- ii. To determine the effect of intralogistics on the operational performance of the Coca-Cola bottling company in Nairobi County, Kenya.
- iii. To establish the impact of packaging systems on the operational performance of the Coca-Cola bottling company in Nairobi County, Kenya.
- iv. To determine the impact of transport volume on the operational performance of the Coca-Cola bottling company in Nairobi County, Kenya.

1.4 Value of the Study

The study aimed to determine how logistical packing affects the effectiveness of operations of the Coca-Cola bottling company in Nairobi County, Kenya. The research's conclusions could greatly help the firms processing soft drinks and packaging in the sense that the companies will see the importance of maximizing logistical packaging to enhance performance. This will reduce costs, increase productivity, add customer value and foster environmental conservation.

Different bodies such as government and other regulatory bodies may find the findings meaningful when formulating programmes and policies to address environmental concerns. On the other hand, researchers and academics can utilize this study to enhance further research by identifying gaps.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Reviewing in this part were the theories and the empirical research relating to logistical packaging and organization performance. It also described logistical packaging in detail.

This chapter also contained the conceptual framework

2.2 Theoretical Literature Review

Two theories were the foundation of this inquiry. They included RBV and the systems theory. They guided the study in determining the impact of logistical packaging on operational performance of Coca-Cola bottling company.

2.2.1 Resource-Based view

Resource-based view states that a business is best positioned for long-term success if its resources are valuable, uncommon, challenging to duplicate, and irreplaceable. These tactical tools can act as the cornerstone for the growth of powerful abilities that will ultimately result in extraordinary performance. Barney (1991) states that the resource-based perspective looks at how internal characteristics of an organization affect performance. Penrose (1959) first suggested Resource-Based Theory (RBT), which offered a framework for effectively managing firms' resources, diversification strategy, and productive opportunities. The application of a variety of physical and intangible resources is viewed by the resource-based perspective as the basis for a competitive advantage (Penrose, 1959). A company's ability to compete can be aided by internal or externally generated resources (Oliveira, Godinho, Gonçalves, Costa, Silva & Amorim, 2018).

Strategic assets are special in a way that keeps the company competitive. These are related to their quality, difficulty of duplication by rivals, and lack of perfect substitutes. According to this notion, the entity must make use of its available resources in order to be competitive (Yang & Lirn, 2017).

According to this notion, resources are important in the implementation of logistic packing. Based on this RBV, a favorable correlation between logistic packaging and operational performance is anticipated. This is because the availability of resources would improve the implementation and success of logistic packing. This would improve the firm's performance in turn. The resource-based perspective looks at how a company's internal qualities and performance are related (Barney) (1991). In this case, a company need to facilitate effective logistics on the packaging resources. This would ensure that unnecessary costs like holding and other inventory costs are reduced. The reduction in such costs would lead to increment in the net income of the organizations. Effective logistics packaging would increase effectiveness in the supply chain. This would reduce designs which would require various resources. This would attract more supply chain costs hence improved supply chain performance. The possession of unique resources by a company would increase their transport volume which would reduce the transport cost per unit. The resources would also enable the company to come up with classic packaging customers and hence increased sales performance. The logistical and packaging systems by a company would be implemented through key resources like ICT employees and other key resources which would in turn increase operational performance.

2.2.2 Systems Theory

System theory is one of the most often employed ideas in current supply chain administration research. This theory is employed in this study to pinpoint organizational stakeholders and to deconstruct intricate organizational structures. The underlying premise of this theory is that no system, in this case a supply network, should be viewed in terms of its individual elements. Instead, it is asserted that a system's actions and results can only be comprehended when taken into account as a whole. The integrated SCM method makes the case that a supply network as a whole can and should be considered as a totally closed and thus managed system, going farther than the focus network or the power perspective. Bertalanffy first suggested the concept of systems (1946). According to the notion, organizations are made up of numerous subsystems that aren't always connected but yet function as a whole. Furthermore, a different "configuration" of its constituent parts could result in systems with equivalent components still being distinct. This frequently results in various interactions between the parts.

The theory explained the organization or activity as a system of various departments or activities. The logistics systems comprise information and control, packaging and unitization, transit, storage, warehousing, and material handling. This shows that this study proposed the coordination of the elements of logistics and packaging, which would increase efficiency. This, in turn, improved the organization's performance. For effective logistical packaging, all the departments have to be involved for effectiveness. The logistics and packaging have to be handled by two different sections which would call for collaboration. The collaboration between the departments would make sure the packaging and system designs were compliant with the supply chain. The theory simplifies the complex

organizational structures and identify organizational stakeholders. The theory advises that supply networks be seen and controlled as a single, integrated system. This means that a company ought to manage logistic packaging from the top where the subsystems were managed from.

2.3 Logistical Packaging

Logistics packaging is the planning, management and implementation processes to move and store goods (Waters, 2011). Logistics packaging involves maximizing customer value, sales, and profit while organizing the preparation of items for safe, secure, efficient handling, transit, distribution, storage, retailing, consumption, and recovery, reuse, or disposal. (Saghir, 2002). It is also the process of designing, evaluating and production of packages (Tilokavichai et al., 2012). The main components of logistical packaging are packaging design and specifications, intralogistics, transport volume and packaging systems (Twede, 2012). Packaging design connects and makes a product ideal for marketing, a product's form, structure, materials, color, images, typography, and regulatory information must all be considered (Kleineidam, 2020). In logistical packaging, packaging design requirements include shape, material, colour and information on the package. For the products to get to their destination in the original state, there is a need for the organization to ensure that the product design is well done. This ensures that the material is strong enough not to get torn with the shape allowing for adequate packaging (Twede, 2012).

Intralogistics, as an element of logistical packaging, is the practice of managing the logistical movement of materials inside a fulfillment or distribution center by optimizing, integrating, automating, and other means (Fottner et al, 2021). Effective intralogistics calls

for coordinating all elements involved in an installation: storage, transportation, and management systems, as well as products and operators (Fragapane et al, 2020). This study assessed intralogistics in this scenario terms of information systems and conveyor systems. The packaging systems focus on using sustainable materials in transporting, storing, and delivering goods that must be safe to use, have a little carbon footprint, and arrive on time (Chen et al, 2020). They support the designing, evaluating, and producing packages within an organization. Packaging systems are critical to logistical packaging because they allow the organization to ensure product transport, storage and delivery (Meherishi, Narayana & Ranjani, 2019). Meherishi, Narayana and Ranjani (2019) found that packaging systems had an advantageous impact on operational and general performance of a firm.

Transport volume is the number of goods that moves along a supply chain within a specific time and route (Min, Zacharia & Smith, 2019). The volume of goods transported within a supply chain is a crucial element of logistical packaging. In ensuring optimal transport volume, the organization should have a transport packaging defined by the number of products it can carry (Černá, Zitrický & Daniš, 2017). There was the need for the capacity within the packaging and the chain of supplies of the goods transported.

2.4 Empirical Literature Review

This section summarized research on to logistical packaging and operational performance. The studies reviewed are both international and local. The focus, methodology, and results of the empirical research were discussed. The researcher sought to establish the research and knowledge gaps existing within the area of logistical packaging and operational performance. In Sri Lanka, Herath and Endagamage (2022) examined how manufacturing companies' operational performance was impacted by supply chain management practices.

This survey used a cross-sectional questionnaire and was quantitative in nature, with a focus on testing theory. A collection of 37 questions with options from which to choose was utilized to gather information from 200 organizations that were chosen at random. According to the study, there is a connection between operational effectiveness and logistics packaging. The outcomes also depicted that packaging design and transport volume negatively influenced operational performance. This paper looked at logistics packaging as a supply management practice other than the research's primary independent variable. The study was done on all manufacturing firms other than a case of Coca-Cola bottling company. This shows that it was a survey other than study of a case as it was for the ongoing study.

In a research project by Kithu (2022) on the effect of distribution logistics depending on how well Kenyan companies manufacture soft beverages (a case of Nairobi Bottlers Company Limited). Outcomes revealed that logistics packaging had an insignificant and favorable impact on Kenyan soft drink companies' success. In addition to logistical packing, the study examined distribution logistics in relation to performance. The current research utilized a casual design of the research and descriptive methods survey methodology. The study also involved wholesalers, and retailers with the current study involving the employees of Coca-Cola bottling company.

An experimental research of going green methods, business performance and standing of Taiwanese ship containers was conducted by Shang, and Weng in 2021. The stud results indicated that packaging logistics as a green shipping practice was positively associated with operational performance. The current study examines logistical packaging and operational performance while the previous study conceptually examined green shipping

methods, business reputation. Contextually, the notion involved ship containers other than manufacturers like Coca-Cola bottling company-Kenya. Instead of using a regression analysis model, as it was done for the current study, which was conducted as a survey with the current study conducted as a case study, the study employed structural equation modeling.

Abbas (2021) researched the presentation of top supermarkets in Nairobi County, Kenya, as well as logistics management techniques. The study found that adopting packaging practices significantly impacted the performance of the leading supermarkets. The study also found that intralogistics significantly influenced performance. Conceptual, the study at logistics management practices other than logistical packaging. The study was done in supermarkets with the current done in manufacturers. Methodologically, the adopted design was a descriptive survey other than cross-sectional design.

Reverse logistics' has an effect on performance of Kenyan markets that produce food and beverages researched by Mutuku and Moronge in 2020. The research found that the management of goods returns, recycling, disposal, and product packaging design positively correlated with how well Kenyan companies that produce food and beverages perform in their operations. Research showed conceptual gaps in that they looked at reverse logistics and organizational performance other than logistical packaging study methodology was to operational performance. It also showed methodological gaps in that the A descriptive rather than cross-sectional research design was used in the study. Additionally, the study employed both regression and correlation analysis. with the current study adopting regression analysis only.

Package systems in WCMPs and financial results of listed US manufacturing companies were investigated by Lyngstadaas (2020). With the present study, the study concentrated on WCMPs and financial performance focusing on logistical packaging and operational performance. Contextually, the study was based on US-listed manufacturing firms while the current study focused on Kenyan manufacturer-Coca-Cola bottling company. Methodologically, the study adopted qualitative comparative analysis and panel data regression with the current study adopting regression analysis.

In their 2019 study, Abdul, Iortimbir, Oladipo, and Olota examined how logistics management affects operational performance. According to the study, information flow management, inventory management, and transport impacted operational performance positively. The study, however, found that intralogistics had no significant influence on operational performance. The study looked at logistics management other than logistical packaging in relation to operational performance. The study involved Dangote Flour Mills in Nigeria while the current study involved Coca-Cola bottling company indicating a contextual gap. The study adopted a descriptive survey other than a cross-sectional. This study's research methodology reveals variances in research methods.

Aleri Monari (2018) studied the effects of green supply chain management on Kenya's licensed automobile companies' performance. Analysis revealed that green procurement practices significantly affected performance. The study looked at green logistics management other than logistical packaging related to performance. The study also based the analysis on automotive firms other than manufacturing firms like Coca-Cola bottling company. The study adopted correlational research design other than cross-sectional research design showing that research gaps existed.

In their 2018 study, Atnafu and Balda examined how techniques for inventory management affected the effectiveness of operations and competitiveness both micro, small businesses in Ethiopia. The results indicated that higher inventory management practices like packaging systems can improve operational performance. The study studied inventory management influencing competitiveness and performance other than logistical packaging and performance showing a conceptual gap. The study also collected data from micros and small manufacturers in Ethiopia other than large manufacturers in Kenya like Coca-Cola bottling company an indication of a contextual gap. The study adopted structural equation modelling (SEM) other than multiple regression model showing methodological gaps.

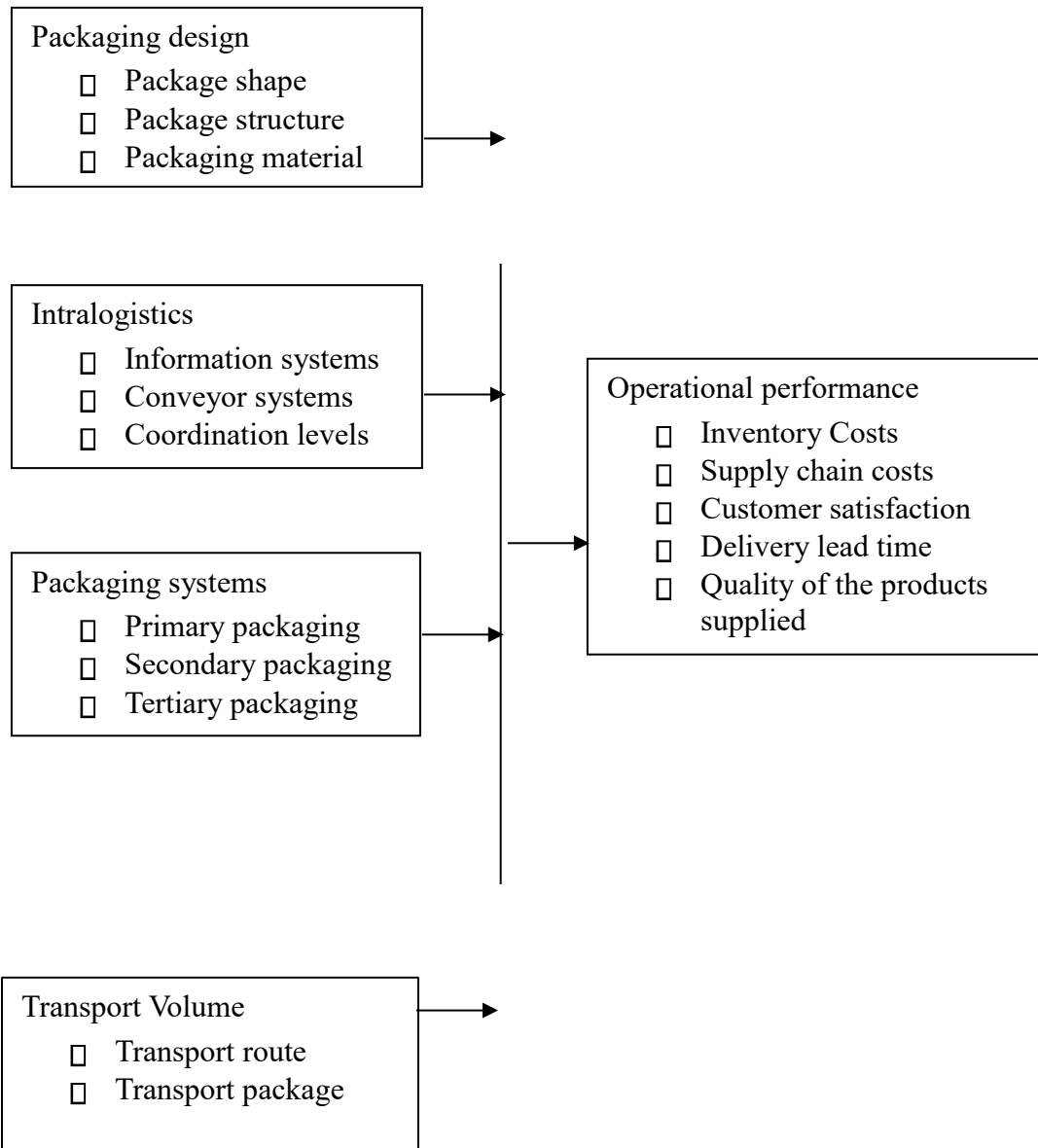
Garca-Arca, González-Portela Garrido, and Prado-Prado (2016) investigated packaging logistics to enhance performance of Spanish manufacturers' network of supply. The study found that packaging logistics like intralogistics affected performance positively. However, packaging systems had no significant influence on performance. The study included meta-standards implementation in the connection between packaging logistics and performance displaying a conceptual gap. In this study, an exploratory study design was adopted with the current study adopting a cross-sectional design. The study was done on Spanish manufacturers in the food industry with the current study done in Coca-Cola bottling company Kenya.

2.5 Conceptual Framework

From the theoretical foundation (Figure 2.1), this study used logistical packaging operational effectiveness both as the independent variable and the dependent variable. Logistical packaging was displayed by packaging design, intralogistics, packaging systems and transport volume.

Independent Variable

Dependent Variable



Source: Author (2023)

Figure 2.1: Conceptual Model

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Research technique is a methodical way to finding a certain problem's answer. Its objective is to present a research work plan, and it is referred to as a study of knowledge acquisition techniques. The best research approach was selected in accordance with the relevant research aim, the type of content, and the resources available.

3.2 Research Design

This study's research design was cross-sectional in nature. The cross-sectional design is a research methodology that is used to gather data from a specific population at one moment in time (Sekaran & Bougie, 2016). It entails gathering data from various persons or entities within the population and analyzing the correlations between variables of interest. The design enabled the researcher to get information from the staff of Coca-Cola bottling company at a specific time. Hence, the cross-sectional design provided useful information on how logistical packaging affects the operational performance of the Coca-Cola bottling company. This made the design a fit for the study.

3.3 Target Population

Participants was the Kenyan Coca-Cola bottling company employees. The study targeted senior employees from the Coca-Cola bottling company. The senior employees were from the general management, procurement and logistics, distribution and stores, marketing and operation. Two employees were targeted from the procurement department, two from distribution and stores, two from marketing, two from operation and two from the general management. Consequently, the intended audience consisted of the ten personnel from the five departments. The employees were the ones to fill the questionnaires in the study. These

departments were preferred since they were key departments dealing with logistics, packaging and procurement performance. The employees in these departments were better placed to provide information on logistical packaging and operational performance. This allowed the researcher to adequately respond to the research objective. The research used a sample survey where all the employees within the five departments were sampled. This means that ten employees formed the sample for the study.

3.4 Data Collection

The research gathered original data. A questionnaire was used to gather the information. The questionnaire was preferred due to its ability for gathering a large volume of data in a timely manner and cheaper (Kothari, 2014). The survey had a semi-structured format. Both closed-ended questions were included in the survey. The researcher was able to provide options from which the respondent can select ones in closed-ended questions, and this helped to direct the research. Likert scale questions have a 5-point range. The questionnaire had three parts. Section one contains inquiries relating to demographic information of the respondents. Questions pertaining to logistical packaging was found in the second section. Performance-related queries were included in the third and final question.

3.5 Data Analysis

Mean, standard deviation, percentages, and frequency distributions are examples of descriptive statistics used to assess the quantitative data. In addition, multiple regressions were used in inferential statistics. For data analysis, SPSS Version 25 was used. Outcomes from the analysis were displayed in the form of tables. The information was presented in a narrative format and subjected to thematic analysis. A multiple regression analysis was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: Y = Operational performance;

β_0 = Constant Term;

$\beta_1, \beta_2,$ and β_3 = Beta coefficients;

X_1 = Packaging design;

X_2 = Intralogistics;

X_3 = packaging systems;

X_4 = Transport Volume

ε = Error term

3.6 Operationalization of the Study

Table 3.1: Operationalization of the Study

Variable Type	Variable Name	Indicators	Measurement	scale	Data Collection Tool	Data Analysis
Independent	Packaging design	<ul style="list-style-type: none"> • Package shape • Package structure • Packaging material 	Likert scale	Interval	Questionnaire Section II	Descriptive
	Intralogistics	<ul style="list-style-type: none"> • Information systems • Conveyor systems • Coordination levels 	Likert scale	Interval	Questionnaire Section II	Descriptive
	packaging systems	<ul style="list-style-type: none"> • Primary packaging □ Secondary packaging • Tertiary packaging 	Likert scale	Interval	Questionnaire Section II	Descriptive
	Transport Volume	<ul style="list-style-type: none"> • Transport route • Transport package • Transport time 	Likert scale	Interval	Questionnaire Section II	Descriptive
Dependent	Operational Performance	<ul style="list-style-type: none"> • Inventory Costs • Supply chain costs • Customer satisfaction • Delivery lead time 	Likert scale	Interval	Questionnaire Section III	Descriptive

Source: Author (2023)

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

The conclusions from the analysis are discussed, interpreted, and presented in this chapter. It presents the respondents' background data as well as the analyses' findings based on the study's variables. The results of the investigation were discussed using descriptive and regression statistics. This study involved ten respondents who were issued with the questionnaire. From the ten questionnaires administered, ten were properly filled out and returned. This gave a 100% response rate. The response rate is excellent as Mugenda and Mugenda (2012) recommends as satisfactory, a response rate of at least 70% and excellent. Further, 100% of respondents shows that each and every questionnaire was duly filled and returned. This reduced nonresponse bias which increased the validity of the study's findings. Further, the 100% response rate increased the credibility of the outcomes from this research.

4.2 Background Information

The statistical results pertaining to the respondent's background are presented in this section. Age, greatest level of education, department, and years spent in the current organization are specifically analyzed.

Table 4.1: Age of the respondents

	Frequency	Percent
25-35 years	1	10.0
36-45 years	3	30.0
46-55 years	5	50.0
56 years or older	1	10.0
Total	10	100.0

Source: Author (2023)

50% of the respondents indicated that they were aged 46-55 years. Further, 30% indicated 36-45 years while 10% indicated 25-35 years and 56 years and older in each case. This shows that majority of the employees in Coca-Cola bottling company are aged above 35 years. This may be due to young people taking time to gain enough experience for them to join Coca-Cola bottling company which makes them go beyond the youthful age.

Table 4.2: Respondent’s Highest Educational Level

	Frequency	Percent
First Degree	6	60.0
Higher Diploma	1	10.0
Master’s degree	2	20.0
Doctorate	1	10.0
Total	10	100.0

Source: Author (2023)

Among those with the greatest levels of education, 60% of respondents indicated first degree as the highest education attained. On the other hand, 20% indicated Master’s degree, while 10% indicated higher diploma and doctorate as the most advanced educational level. This shows the vast majority of employees at Coca-Cola have a first degree which makes them understand how logistical packaging influences operational performance in their organization.

Table 4.3: Department of the Respondents

	Frequency	Percent
Procurement, distribution and Stores	4	40.0
Operations	2	20.0
Others	4	40.0
Total	10	100.0

Source: Author (2023)

The respondents were asked to identify the department they were employed with. 40% of respondents, according to the results, indicated that they worked with the

PROCUREMENT, distribution and stores departments as well as other departments (marketing and administration) in each case. However, 20% indicated that they worked with the operations department. This shows that all the departments were involved in the research hence reducing bias in the research.

Table 4.4: Years Worked At Coca-Cola

	Frequency	Percent
1-5 years	2	10.0
6-10 years	5	50.0
11-15 years	2	30.0
15 years or more	1	10.0
Total	10	100.0

Source: Author (2023)

The researcher wanted to know how long the respondents had been employed at Coca-Cola. The results showed that 50% had worked in Coca-Cola for 6-10 years. As opposed to that, 30% indicated 11-15 years while 10% indicated 1-5 years and 15 years and more in each case. This shows the vast majority of employees held a job in Coca-Cola for more than 5 years indicating that they were aware how logistical packaging influences operational performance.

4.3 Logistical Packaging

The purpose of this study was to evaluate the logistical packaging situation at the Kenyan Coca-Cola Company. The logistical packaging was based on packaging design, intralogistics, packaging systems and transport volume.

4.3.1 Packaging Design

In the first objective, the goal of the study was to determine how packaging design affected the Coca-Cola bottling company's operational effectiveness in Nairobi County, Kenya. The

researcher asked the respondents to rate their level of agreement with several claims about packaging design in order to achieve this goal. The data from the respondents were analyzed using the mean and standard deviation.

Table 4.5: Statements on Packaging Design

Statement	Mean	Std. Deviation
Shape of packaging my organization used is appealing to the customers	4.0000	.81650
My organization adopts packaging of different shapes for their products	3.9000	1.10050
My organization uses quality material for their packages	3.9000	.87560
The packaging material used by my organization varies in quality	3.7000	1.25167
The packaging adopted by my organization is well structured	4.2000	.78881

Source: Author (2023)

The researcher discovered from the results that the respondents agreed that the packaging form utilized by their company was appealing to the customers. (M=4.0000; SD=0.8165). The respondents further agreed that their organization adopted packaging of different shapes for their products (M=3.9000; SD=1.1005); and that their organization used quality material for their packages (M=3.9000; SD=0.8756). They also concurred that the packaging material used by their organization varied in quality (M=3.7000; SD=1.25167); and that the packaging adopted by their organization was well structured (M=4.2000; SD=0.78881). This shows that packaging design as logistical packaging element is adopted and doing well in Coca-Cola bottling company.

4.3.2 Intralogistics

In the second objective, the goal of the study was to ascertain how intralogistics affected the Coca-Cola bottling company's operational performance in Nairobi County, Kenya. The respondents were asked to rate their level of agreement with statements on intralogistics in order to address the aim.

Table 4.6: Statements on Intralogistics

Statement	Mean	Std. Deviation
My organization has information systems in place	4.3000	.48305
My organization has conveyor systems in place	3.8000	.67495
My organization ensures coordination within the logistical packaging team	4.1000	.87560
The management supports the team involved in logistics packaging within the organization	3.9000	.56765

Source: Author (2023)

According to the results, the respondents said their organization had information systems in place as shown by mean of 4.3000 (SD=0.48305). The respondents concurred that conveyor systems are in existence at their company. (M=3.8000; SD=0.67495); and that their organization ensured coordination within the logistical packaging team (M=4.1000; SD=0.8756). They further agreed that the management supported the team involved in logistics packaging within the organization as shown by mean of 3.9000 (SD=0.56765). This shows that intralogistics is effective in logistical packaging within Coca-Cola bottling company.

4.3.3 Packaging Systems

In the third objective, the purpose of the study was to determine how packaging systems affected the Coca-Cola bottling company's operational effectiveness in Nairobi County, Kenya. To address this, the respondents were asked to rate how much of the comments about the packaging processes at the Coca-Cola bottling company they agreed with..

Table 4.7: Statements on Packaging Systems

Statement	Mean	Std. Deviation
My organization adopts effective primary packaging	4.1000	.56765
Secondary packaging within my organization if of high quality	3.8000	1.03280
Quality tertiary packaging are adopted within my organization	3.9000	.87560
My organization has operational packaging systems in place	3.7000	.78881
The packaging systems within my organization are effective	4.2000	.63246

Source: Author (2023)

The outcomes showed that the respondents agreed that their organization adopted effective primary packaging as shown by mean of 4.1000 (SD=0.56765). The respondents further agreed that secondary packaging within their organization was of high quality (M=3.8000; SD= 1.03280); quality tertiary packaging was adopted within their organization (M=3.9000; SD=0.87560); and that their organization had operational packaging systems in place (M=3.7000; SD=0.78881). The respondents also agreed that the packaging systems within their organization were effective (M= 4.2000; SD=0.63246). This shows that the packaging systems in Coca-Cola are effective.

4.3.4 Transport Volume

To ascertain how the volume of transit affects the functioning of the Coca-Cola bottling plant in Nairobi County, Kenya.

Table 4.8: Statements on Transport Volume

Statement	Mean	Std. Deviation
My organization transports large volumes of products	4.1000	0.99443
The transport route defines the volume of products transported by the organization	3.9000	1.10050
The transport packages are quality enough to handle high volume of products	3.7000	1.01167
The frequency of transportation is high which enables movement of large volumes of products in the supply chain	3.8000	1.13529

Source: Author (2023)

The respondents agreed that their organization transported large volumes of products as shown by mean of 4.1000 (SD=0.99443) and that the transport route defined the volume of products transported by their organization (M=3.9000; SD=1.1005). They concurred that the transport packages were quality enough to handle high volume of products (M=3.7000; SD=1.01167); and that the frequency of transportation was high which enabled movement of large volumes of products in the supply chain (M=3.8000; SD=1.13529). This shows that Coca-Cola bottling company transports large volumes of goods.

4.4 Operational Performance

The purpose of the study was to determine the operational performance status at the Coca-Cola bottling company.

Table 4.9: Operational Performance

	Mean	Std. Deviation
Operational performance is high	2.3000	.96609
Inventory costs are high within my organization	4.1000	.91894
Supply chain costs are high within my organization	4.2000	.78881

Customer satisfaction is low within my organization	2.4000	.84327
My organization experiences low lead times for delivery	2.1000	1.08012

Source: Author (2023)

The respondents agreed that inventory costs were high within the organization as shown by 4.1000 (SD=0.91894). They also agreed that supply chain costs were high within their organization as shown by mean of 4.2000 (SD=0.78881). However, they disagreed that operational performance was high (M=2.3000; SD=0.96609); customer satisfaction was low within my organization (M=2.4000; SD=0.84327); and that their organization experiences low lead times for delivery (M=2.1000; SD=1.08012). This shows that operational performance in Coca-Cola bottling company is low.

4.5 Effect of Logistical Packaging on Operational Performance

The study's goal was to ascertain how logistical packing impacts the efficiency of the Coca-Cola bottling operation in Nairobi County, Kenya.

Table 4.10: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.535	1.236		-5.285	.001
	Packaging Design	.251	.107	.220	2.356	.043
	Intralogistics	1.090	.366	.749	2.976	.016
	Packaging Systems	.827	.235	.691	3.520	.007
	Transport Volume	-.497	.160	-.390	-3.105	.013

a. Dependent Variable: Operational performance t-critical=2.262

Source: Author (2023)

From the coefficient table,

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

was fitted into;

$$Y = -6.535 + 0.251X_1 + 1.090X_2 + 0.827X_3 - 0.497X_4$$

From the fitted equation, the constant term, also known as the intercept, represents the estimated value of the dependent variable (Operational performance) when all independent variables (packaging design, intralogistics, packaging systems transport volume) are held constant. In this case, the estimated constant is -6.535 ($t=-5.285$; $p=0.001$). This shows that the predictors possessed significant influence on operational performance. The unstandardized coefficient for packaging design is 0.251. This shows that, for every one unit increase in packaging design, the operational performance is estimated to significantly increase by 0.251 units. The positive coefficient shows that packaging design has positive effects of design on operational effectiveness supported by a positive t-value (2.356). The t-value is above the threshold value of 2.262, suggesting a significant effect. This was supported by the p-value of 0.043 which was less than 0.05 indicating a significant effect.

This means that better packaging design is associated with better operational performance.

The unstandardized coefficient for intralogistics is 1.090 ($t=2.976$; $p=0.016$). Hence, for every one-unit increase in intralogistics, the operational performance is estimated to increase by 1.090 units. The positive regression coefficient and positive t-value shows a positive effect of intralogistics on operational performance. The pvalue of less than 0.05 and a t-value >2.262 indicates a significant effect of intralogistics on operational performance. This means that improved intralogistics is associated with better operational

performance. Packaging systems showed unstandardized coefficient of 0.827 ($t=3.520$; $p=0.007$). Therefore, for every one-unit increase in packaging systems, the operational performance is estimated to increase by 0.827 units. The positive coefficient and t-value demonstrates a favorable correlation between packaging systems and operational effectiveness. In addition, $t\text{-value}>2.262$ and $p\text{-value}<0.05$ show that packaging systems had a significant effect on operational performance. This means that increased packaging systems leads to better operational performance.

Transport volume, on the other hand, showed unstandardized coefficient of -0.497 ($t=3.105$; $p=0.013$). This demonstrated that the operational performance increased by one unit for every increase in transit volume. is estimated to decrease by 0.497 units. The negative coefficient and t-value suggests an inverse effect of transport volume on operational performance. Further, the $t\text{-value}>2.262$ and $p\text{value}<0.05$ depicts that transport volume possessed a significant effect on operational performance. Therefore, increased transport volume leads to poor operational performance. The variables' p-values were less than 0.05. This means that the effect of logistical packaging indicators (packaging design, intralogistics, packaging systems transport volume) on operational performance was at a threshold of statistical significance of 0.05. This was supported by t-values > 2.262 (critical t-value).

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.868 ^a	.754	.557	1.60222

a. Predictors: (Constant), Transport Volume, Packaging Design, Intralogistics, Packaging Systems

Source: Author (2023)

According to the model summary, the predictors and operational performance have a strong positive association (R value, or correlation coefficient), which is 0.868. The degree to which the regression model accurately represents the data is shown by the coefficient of determination, often known as R-squared. The R-squared value in this instance is 0.754, indicating around 75.4% of the dependent variable's variability (operational performance) can be accounted for by changes in the independent variables. included in the model (packaging design, intralogistics, packaging systems and transport volume). The remaining 24.5% of the variation other predictive aspects in operational performance that were not taken into account by the model.

Table 4.12: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	79.264	4	19.816	7.719	.023 ^b
	Residual	12.836	5	2.567		
	Total	92.100	9			

a. Dependent Variable: Operational performance

b. Predictors: (Constant), Transport Volume, Packaging Design, Intralogistics, Packaging Systems

F-critical: 5.1921

Source: Author (2023)

The results of the ANOVA test show that the groups' average operational performance differs significantly from one another. ($p = 0.023$). This means that the independent variables (packaging design, intralogistics, packaging systems transport volume) a sizable effect on the dependent variable (operational performance). The mean square for the regression (19.816) is significantly greater than the mean square for the residual (2.567). This shows that a sizable portion of the variance in the dependent variable may be accounted for by the independent factors. The F-calculated (7.719) is greater than the F-critical (5.1921) demonstrating that the regression model fits the data and is statistically

significant. The 0.05 alpha level is greater than the p-value of 0.023, which means that the results of the ANOVA test are statistically significant. The regression model is significant as a result. Hence, researcher concludes that operational performance is significantly impacted by logistical packing factors.

4.6 Discussion of the Findings

According to the study, operational performance was significantly impacted by logistical packaging. This means that increased logistical packaging would cause a significant change in the operational performance. The results are comparable to those of Abdul, Iortimbir, Oladipo, and Olota (2019) who found that packaging logistics impact operational performance significantly. Kithu (2022) found that logistics packaging had an insignificant impact on performance.

When the firm invests in optimizing its logistical packaging, it streamlines its supply chain, reduces inefficiencies, and enhances overall performance. This finding aligns with resource-based theory, as logistical packaging can be considered a valuable resource that contributes to the firm's competitive advantage. From a systems theory perspective, An essential component of the overall logistics system is logistical packaging. When the packaging is optimized, it creates a smoother flow of goods within the system, reducing delays and disruptions. This enhanced packaging interacts with other elements of the system, such as transportation and warehousing, leading to improved operational performance.

From the findings increase in packaging design led to increased operational performance. This suggests that an improvement or enhancement in packaging design is connected with improved operational effectiveness. This indicates that packaging design had a positive

effect on operational performance. A well-designed packaging system can contribute to improvement of various aspects of operational performance. The results are comparable to findings by Mutuku and Moronge (2020) who found that product packaging design positively correlated with firm perform in their operations. However, Herath and Endagamage (2022) found that packaging design negatively influenced operational performance.

From a resource-based theory perspective, this finding suggests that packaging design is a valuable capability that sets the firm apart from its competitors, contributing to its performance. From a Systems Theory viewpoint, packaging design is interconnected with different components within the organization's operations. An improved design enhances the efficiency of the overall logistics system, positively influencing how goods move through the system. This, in turn, impacts delivery times, customer satisfaction, and the organization's overall performance.

On the other hand, Increased intralogistics contributed to an increase in the operational performance. This showed a favourable impact of intralogistics on operational performance of the target firm. The findings are the same as those of Abbas (2021), who found that intralogistics significantly influenced performance. However, they differed with those of Abdul et al (2016) who established that intralogistics had an insignificant influence on performance.

The positive effect of intralogistics on operational performance supports resource-based theory. Intralogistics represents a valuable resource for the organization, contributing to its competitiveness. Efficient intralogistics processes can lead to smoother operations, reduced lead times, and optimized resource utilization, ultimately enhancing operational

performance. From a Systems Theory perspective, intralogistics is a critical part of the overall logistics system. An efficient intralogistics system ensures better coordination and resource utilization, which positively impacts operational performance.

Packaging systems showed a positive coefficient against operational performance. In addition, increased packaging systems led to better operational performance. Therefore, packaging systems had a favorable impact on operational effectiveness. The findings are similar to those of Atnafu and Balda (2018) whose results indicated that more advanced inventory management techniques like packaging systems improved operational performance. The results however differed with those of Garca-Arca et al (2016) who established that packaging systems didn't have a big impact on performance. The finding that increased packaging systems positively impacted operational performance is consistent with resource-based theory. Packaging systems can be seen as valuable capabilities that contribute to the firm's competitive advantage. From a systems theory standpoint, packaging systems are interconnected with other elements of the organization's operations. An enhanced packaging system integrates seamlessly with transportation, inventory management, and other functions, leading to a highly coordinated logistics system.

Transport volume, on the other hand, showed negative regression coefficient. This indicated that, increase in transport volume decreased operational performance. The negative coefficient demonstrated that the impact of transit volume on operational performance was detrimental. The findings are similar to those of Herath and Endagamage (2022) found that transport volume negatively influenced operational performance due to logistical complexity. However, the outcomes differed with those of Abdul et al (2019) who found that transport volume had a positive influence on operational performance.

An increase in transport volume was associated with a decrease in operational performance. In relation to resource-based theory, this finding could suggest a resource constraint or lack of capabilities to handle higher transport volumes effectively. According to ResourceBased Theory, if the firm lacks the necessary resources, such as optimized logistics networks or transportation infrastructure, it can negatively impact its overall performance. From a Systems Theory perspective, transport volume is a critical component of the logistics system. An imbalance between transport volume and the system's capacity can create bottlenecks and strain resources. This negative impact on the system affects the organization's overall operational performance.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The findings are summarized in this chapter. The chapter also includes the study's conclusion and recommendations based on its goals. The study sought to determine how logistical packing affects the operational performance of the Coca-Cola bottling company in Nairobi County, Kenya. Specifically, the study aimed to establish the relationship between packaging design and operational performance, as well as the relationship between intralogistics and operational performance, packaging systems and operational performance, and the relationship between transport volume and operational performance of the Coca-Cola bottling company.

5.2 Summary of Findings

Based on the results on packaging design, the researcher found that the respondents agreed that shape of packaging their organization used was appealing to the customers. They also that their organization adopted packaging of different shapes for their products while using quality material for the packages. They also agreed that the packaging material used by their organization varied in quality but well structured.

On intralogistics, the respondents indicated that their organization had information and conveyor systems in place. The organization ensured coordination within the logistical packaging team with management support to the logistics packaging team. The findings showed that intralogistics was effective within the company.

For packaging systems, the respondents agreed that their organization had effective operational packaging systems in place. The respondents also agreed that their organization adopted effective primary and secondary packaging of high quality. They also agreed that quality tertiary packaging was adopted within their organization. This shows that the packaging systems were effective within the target organization.

For transport volume, the respondents concurred that their business transported large volumes of products and that the transport route defined the volume of products transported by their organization. The transport packages were quality enough to handle high volume of products. The organization had a high frequency of transportation which enabled movement of large volumes of products in the supply chain. The company transported large volumes of goods.

On operational performance, the study found that inventory and supply costs were very high within the organization. The customer satisfaction within the organization was also high. However, the operational performance was poor with a disagreement that their organization experienced low lead times for delivery. This shows that operational performance in the company was low.

There was a significant positive connection between the predictors, as revealed by the regression analysis. (packaging design, intralogistics, packaging systems and transport volume) and operational performance. The findings also showed that approximately 75.4% of the variability in the operational performance could be explained by packaging design, intralogistics, packaging systems and transport volume. The results of the ANOVA test indicate that packaging design, intralogistics, packaging systems transport volume had a substantial effect on the effectiveness of operations.

In addition, with an increase in packaging design, the operational performance is estimated to increase. The positive coefficient shows that packaging design has a favorable impact on operational effectiveness. This shows that better packaging design is associated with better operational performance. On the other hand, increase in intralogistics led to increased operational performance. The coefficient shows a favourable impact of intralogistics on operational performance. Packaging systems, further, showed a positive coefficient showing that increased packaging systems led to increased operational performance. For transport volume, the negative coefficient showed that increase in transport volume led to reduction in the operational performance Therefore, increased transport volume leads to poor operational performance.

5.3 Conclusion of the Study

From the findings on packaging design, Coca-Cola bottling company in Kenya adopts well structure and quality packaging of different shapes for their products which is appealing to the clients. The study comes to the further conclusion that the operational effectiveness of the Coca-Cola bottling company in Kenya is positively impacted by packaging design. This suggests that the company's implementation of effective packaging design strategies has resulted in improved operational performance outcomes. The study findings highlight the significance of packaging design as a contributing factor to the success and performance of Coca-Cola in the Kenyan market.

On intralogistics, the study concludes that Coca-Cola bottling company in Kenya has information and conveyor systems in place. There is team coordination and management support in logistical packaging within Coca-Cola bottling company in Kenya. The study also concludes that intralogistics is effective within the Coca-Cola bottling company.

Further, the researcher concludes that intralogistics has a favorable impact on the Kenyan Coca-Cola bottling company's operational performance. This suggests that, in the context of Coca-Cola's operations in Kenya, the study's findings point to a substantial relationship between intralogistics and operational performance. The positive effect indicates that effective intralogistics practices, which encompass the packaging systems and processes within the company's internal operations, have contributed to improved operational performance outcomes for Coca-Cola in Kenya.

For packaging systems, the study concludes that Coca-Cola company in Kenya has effective operational packaging systems. The company adopts effective and quality primary, secondary and tertiary packaging. Additionally, the research concludes that the Kenyan Coca-Cola Bottling Company's operational performance is positively impacted by its packaging systems. This suggests that, in the context of Coca-Cola's operations in Kenya, the study's findings point to a substantial association between packaging systems and operational performance. The positive effect suggests that implementing efficient and effective packaging systems has led to improved operational performance outcomes for Coca-Cola Company, Kenya. The packaging systems employed by the company have likely contributed to enhanced efficiency, productivity, and customer satisfaction, ultimately leading to positive operational performance.

For transport volume, the researcher concludes that Coca-Cola Company, Kenya transports large volumes of products through a defined route of high frequency. The transport packages by Coca-Cola Company in Kenya are quality enough to handle high volume of products. The researcher's conclusion from the study is that the operational performance of the Coca-Cola bottling company in Kenya is negatively impacted by transit volume.

This shows that the study's findings point to a strong association between transport volume and operational performance within the context of Coca-Cola's operations in Kenya. The negative effect implies that increased levels of transport volume are connected with lower operational performance outcomes for Coca-Cola in Kenya. Factors such as increased transportation costs, delays in delivery, or inefficiencies in logistics management may contribute to this negative relationship. Further analysis would be required to understand the specific reasons behind this finding and explore potential strategies to mitigate the negative impact of transport volume on operational performance.

On operational performance, the study concludes that inventory and supply costs are very high within Coca-Cola Company in addition to high lead time. The customer satisfaction within the organization is also high despite the operational performance being poor. This suggests that the company's overall performance in terms of operational metrics or key performance indicators (KPIs) falls below the desired or expected standards. The study's findings indicate that there are areas of improvement or challenges within Coca-Cola's operations in Kenya that negatively impact its operational performance.

5.4 Recommendations of the Study

Considering the conclusion that packaging design has an advantageous impact on operational performance has a positive effect on the operational performance of Coca-Cola Company in Kenya, it is recommended that the company focus on investing in innovative packaging design that aligns with customer preferences and operational requirements. Conducting market research and gathering consumer insights will help in understanding evolving customer preferences and developing packaging designs that resonate with them. Emphasizing functionality and convenience in packaging design, such as easy opening,

pouring, and storage, can contribute to streamlined logistics operations and enhanced supply chain efficiency. Collaboration with packaging experts and design professionals can bring valuable expertise and insights into the process. Additionally, Coca-Cola should prioritize sustainable packaging design to align with its environmental sustainability objectives, exploring cost-effective materials and sustainable packaging options. By implementing these recommendations, Coca-Cola can capitalize on the benefits of packaging design and how to improve operational efficiency in Kenya.

Based on the conclusion that intralogistics has a favorable impact on the operational performance of Coca-Cola Company in Kenya, it is recommended that the company invests in process optimization and technology adoption. By streamlining material handling, inventory management, and warehouse operations, Coca-Cola can enhance operational efficiency and productivity. Implementing advanced technologies like warehouse management systems (WMS), automated storage and retrieval systems (ASRS), and realtime tracking can further optimize intralogistics processes and enable better inventory control, order fulfillment, and resource utilization. Regular evaluation and improvement of intralogistics practices, along with employee training and continuous performance monitoring, will help Coca-Cola sustain the positive impact of intralogistics on its operational performance in Kenya.

Based on the conclusion that packaging systems have a favorable impact on the effectiveness of operations. of Coca-Cola Company in Kenya, it is recommended that the company focuses on continuous improvement of packaging systems through collaboration with suppliers, integration of automation and robotics, and a sustainability focus. Additionally, investing in employee training and development, utilizing data-driven

decision-making, and regularly evaluating and upgrading packaging systems can further optimize operational performance and drive positive outcomes for Coca-Cola in Kenya.

Based on the conclusion on transport volume, Coca-Cola should focus on optimizing its transportation network by assessing and reevaluating distribution routes, modes of transportation, and scheduling practices. This evaluation should aim to minimize unnecessary transport volume, reduce costs, and enhance overall efficiency. Secondly, improving demand forecasting accuracy and implementing efficient inventory management practices can help reduce transportation needs. By accurately predicting demand patterns and optimizing inventory levels, Coca-Cola can minimize the frequency of transportation requirements and thereby decrease transport volume. Additionally, the company can invest in efficient packaging design and load optimization techniques to maximize product density and minimize wasted space during transportation. This can lead to fewer shipments and reduced transport volume.

5.5 Limitations of the Study

This research encountered a number of obstacles. The first limitation was the lack of will by the responders to offer the data the researcher needs. The researcher sought consent and gave a promise that the data will be kept private and private with no sharing of the same with other parties. There was also an assurance that the information would be used purely for this research. Another limitation was the application of the results broadly. The research was confined to logistical packaging and operational performance as well as specific measures of the variables. Other influencers of operational performance were left out. The research was also limited to Coca-Cola, Kenya which limits the research. The study just used primary data, nothing else and quantitative analysis techniques.

5.6 Recommendations for Further Research

The goal of the study was to ascertain how logistical packaging impacts the efficiency of the Coca-Cola bottling plant in Nairobi County, Kenya. Based on findings from earlier studies that examined the influences of operational performance other than logistical packaging. A similar study in other companies other than Coca-Cola bottling company in Kenya is recommended. There is need for a research based on other measures of logistical packaging and operational performance.

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APPENDICES

Appendix I: Questionnaire

This questionnaire will be used for academic purposes only. Kindly fill in the required information to help in the research study. Your assistance will be highly appreciated.

Section I

1. Kindly indicate your age bracket

- Under 25 years []
- 25-35 years []
- 36-45 years []
- 46-55 years []
- 56 years or older []

2. Highest educational level?

- Certificate and below []
- Diploma []
- First Degree []
- Higher Diploma []
- Master's degree []
- Doctorate []

3. What department do you work in?

- Logistics []
- Packaging []
- Procurement []

4. Work experience in Coca-Cola bottling company

- Under one year []
- 1-5 years []
- 6-10 years []
- 11-15 years []
- 15 years or more []

Section II: Logistical Packaging

5. Select your degree of agreement with the claims made this section. 1 = Strongly

Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree

	1	2	3	4	5
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Packaging Design					
Shape of packaging my organization used is appealing to the customers					
My organization adopts packaging of different shapes for their products					
My organization uses quality material for their packages					
The packaging material used by my organization varies in quality					
The packaging adopted by my organization is well structured					
Intralogistics					
My organization has information systems in place					
My organization has conveyor systems in place					
My organization ensures coordination within the logistical packaging team					
The management supports the team involved in logistics packaging within the organization					
Packaging Systems					
My organization adopts effective primary packaging					
Secondary packaging within my organization if of high quality					
Quality tertiary packaging are adopted within my organization					

My organization has operational packaging systems in place					
The packaging systems within my organization are effective					
Transport Volume					
My organization transports large volumes of products					
The transport route defines the volume of products transported by the organization					
The transport packages are quality enough to handle high volume of products					
The frequency of transportation is high which enables movement of large volumes of products in the supply chain					

Section III: Operational Performance

6. How do you agree with each of the following assertions about the operational effectiveness of your organization?? Use the scale 1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree

	1	2	3	4	5
Operational performance is high					
Inventory costs are high within my organization					
Supply chain costs are high within my organization					
Customer satisfaction is low within my organization					
My organization experiences low lead times for delivery					