THE INFLUENCE OF SUPPLY CHAIN MANAGEMENT STRATEGIES ON SUPPLY CHAIN PERFORMANCE WITHIN THE FOOD AND BEVERAGE INDUSTRY IN KENYA

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DECLARATION

I declare that this work has not been previously approved or submitted for the award of a bachelor's degree by this or any university. To the best of my belief and knowledge, this study contains no material that has been written or published previously by any other person except where due reference is made in the report itself.

Mwaura Joan Wanjiru

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Approval

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ABSTRACT

This study aimed to see how supply chain management affected supply chain success in Kenya's food and beverage industry. The importance of the food and beverage industry in Kenya's economic development cannot be overstated. The market, however, is underperforming due to the fierce competition it faces from the importation of food and drinks from other countries. Previous analysis has also shown that the food and beverage industry has a long way to go before realizing the full benefits of a fully connected supply chain management scheme. Since this aspect has not been thoroughly studied, most distribution departments, for example, do not grasp precisely how supply chain management provides value for their clients. Previous studies have been conducted in various geographical areas. They have used several factors, scopes, and methodologies, resulting in a wide range of findings that, to the best of the researcher's understanding; do not contribute to analyzing supply chain management's effect on supply chain success in Kenya, necessitating the need for this analysis.

The food and beverage sector was used as the target demographic in this analysis, and it was analyzed using a quantitative method. Besides, the researcher used questionnaires to gather accurate information about the company's behaviors, beliefs, and perceptions. The research used linear regression and correlation statistics to analyze the relationship between supply chain management and supply chain efficiency.

The findings indicate that organizations in the food and beverage industry strive to achieve high supply chain performance levels. As was revealed by their coefficients' magnitudes, Supply chain agility at .611 had the most negligible impact on supply chain performance. Supply chain integration at .813 had the highest impact on supply chain performance and was closely followed by supply chain collaboration at .779

The research concluded that for organizations to achieve sufficient supply chain performance levels they had to employ all the three variables analyzed in unison as initiating one and living out the others was found to have minimal impact.

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To all the employees of the different food and beverage organizations who took part in this project, I appreciate your efforts.

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 **Introduction**

Due to the ease with which global markets can be reached, supply chain operations have become popular in today's world. Firms must consider their supply chain practices to meet higher global goals, which is why most companies are interested in supply chain operations management. Management of supply chain operations aids the company in gaining a strategic edge and aids in lowering manufacturing costs and improving customer loyalty in terms of product and service efficiency, distribution speed, and after-sales assistance. It aids in improving the firm's financial status by increasing profit leverage, reducing capital assets such as surplus equipment and warehouses, and increasing cash flow. This research looks into how supply chain management techniques can increase supply chain efficiency in the Kenyan food and beverage industry. When it comes to supply chain management, supply chain efficiency is also essential. It can be assessed in various ways, and this data helps managers make business decisions based on supply chain efficiency.

This chapter would adopt the often followed science expert recommendations for this research paper. An outline, the study's context, the problem statement, and the research questions will all be included in this portion. This report's significance and goals, the study's reach, a description of the main terms included, and a synopsis of the chapter will be covered.

1.2 **Background of the study**

Organizations and company leaders became interested in supply chain management. The study of supply chain management focuses on how businesses can optimize productivity and bring value to the business by using finite resources: supply chain operations have become commonplace in today's world due to the simplicity with which foreign markets can be accessed. To attain higher efficiency, companies must have a good understanding of their supply chain practices. This illustrates why supply chain management has piqued the attention of most, if not all, businesses in the last decade. According to Li et al. (2006), the benefits of supply chain management include having a comparative edge and lowering manufacturing prices, increasing customer satisfaction in terms of product and service efficiency, distribution time, and after-sales support programs. Hugos (2018) also claims that supply chain management will improve a

company's financial position by increasing benefit leverage, reducing fixed assets such as surplus equipment and warehouses, and increasing cash flows.

This research will delve deeper into how food and beverage companies in Kenya can use supply chain management techniques to increase supply chain efficiency. According to Li et al. (2006), in supply chain management, companies often aim to boost supply chain efficiency first. Supply chain efficiency can be measured in various ways, and this information lets administrators make business choices that can enhance the organization's supply chain strategy and, as a result, its performance.

1.2.1 **Supply chain Management Strategies**

Because of its long-term benefits, supply chain management is a prominent issue that companies and other enterprises prefer to delve further into. According to Jacobs, Chase, and Lummus (2011), the study of supply chain management focuses on how companies can optimize productivity and bring value to the business by using finite capital. The practices that bind vendors and buyers together are known as supply chain activities (Inda, 2012). The study of supply chain management techniques is critical for businesses that want to evolve and improve to meet consumer demands, obtain a strategic edge, and achieve their supply chain success goals. Firms must incorporate supply chain solutions that work with them and successfully fulfill their goals to achieve successful supply chain efficiency. As a result, this research aims to explain better the various supply chain strategies used in Kenya's food and beverage industry and how they affect its overall supply chain efficiency.

According to Omain et al. (2010), supply chain management techniques are implemented differently depending on the region and the sector in which the company operates; thus, there is no clear range of supply chain activities that can be considered appropriate for all sectors or all nations. On the other hand, Spens and Wisner (2009) disproved this, seeing more correlations than gaps in supply chain management activities in more than two continents. The study found that perceived value sharing among supply chain members and the relevance of ethical standards among supply chain members were the two most significant differences. According to Munapo et al. (2020), lean processes, Outsourcing, provider alliances, client connections, quality knowledge exchange, and degree of information sharing are some of the supply chain management techniques that have been employed throughout the years. Lean approaches have

been used by organizations worldwide to precisely characterize their corporate systems to remove waste from their activities while delivering high-quality goods for their customers at reasonable costs (TritosLaosirihongthong, 2015). Lean techniques are used in supply chain management to reduce slower operations and improve customer experience. On the other hand, Outsourcing entails handing over manual control of corporate operations to a third party who carries out the processes following the company's laws (Anju Mehta, 2006). In the supply chain, Outsourcing has both benefits and drawbacks.

In most cases, outsourcing raw materials are prohibitively costly for suppliers. It does, however, save time for the manufacturers in sourcing raw materials for manufacturing. Supplier partnerships are becoming more common as a supply chain approach. Allowing a third party to sell products or services to the company is known as a supplier relationship (Awan, 2015).

An organization needs a loyal supplier to optimize supply chain success. Customer relationships are described as a company's efforts to preserve its relationship with its customers and, as a result, gain their loyalty. When comparing the success metrics used by the respondents, similarities were discovered. The most critical factors leading to the supply chain's performance turned out to be similar, as the reported supply chain gains were often improved product or service quality and better customer service.

1.2.2 **Supply Chain Performance**

The supply chain collects individuals, events, documents, tools, and organizations that enable a product or service to be provided to the end-user. It begins with the manufacturer or seller and ends with the wholesaler, supplier, and eventually the end-user. Organizations strive to achieve high levels of success to meet their objectives and fulfill their clients' desires. This is referred to as "success." According to Gunasekeran (2004), a supply chain must be calculated and linked to a collection of predetermined benchmarks to achieve the aims and targets.

Over the years, researchers have attempted to determine the value of supply chain management efficiency assessment and how it is accomplished. The current and expected values must be compared, and the appropriate actions must be taken to ensure that the supply chain's output improves. Because of the use of policy deployment, Lean six sigma, and balanced scorecards as supply chain success metrics, most companies in the food and beverage sector are on their way

to achieving supply chain organizational excellence. Shorter turnaround times, lower prices, and lower inventory are all advantages for these businesses. According to Batuhan (2011), to understand the various supply chain processes, such as preparing, importing, manufacturing, and shipping finished goods to consumers, the researchers had to divide the steps into tactical, strategic, and organizational stages.

An effective sales and operations planning process and Lean Six Sigma methods such as Kannan systems and quick changeover may help the organization optimize its inventory investment and achieve a positive impact on cash flows and overall profitability while ensuring the organization meets its goals.

1.2.3 **Supply chain management strategies and Supply Chain performance**

Supply chain management practices affect a company's overall performance (Perry, 2012). Several previous research on supply chain management and efficiency (Li et al., 2006; Agus, 2011; Annan et al., 2013; Arun& Kumar, 2014; Hussain et al., 2014) found a strong correlation between supply chain management techniques and supply chain performance. For example, Li et al. (2006) developed five different dimensions of supply chain management strategies: postponement, customer interaction, strategic supplier collaboration, information sharing levels, and information sharing efficiency, and then measured the relationship between these dimensions and supply chain results. Higher levels of supply chain management techniques resulted in better supply chain efficiency, according to the findings. However, Tan et al. (1999) found that overall supply base management, quality management, and supply chain management are not always effective in terms of execution or achieving optimal outcomes after implementation.

1.2.4 **Analysis of Food and Beverage Industry in Kenya**

Kenya's manufacturing industry is an important sector that contributes significantly to the country's economic growth. Manufacturing is expected to contribute about 20% of the country's gross domestic product. The sector is listed as one of the critical pillars in Vision 2030, which aims to make Kenya a middle-income nation by 2030. According to the Kenya Association of Manufacturing (KAM), there are 217 listed food and beverage manufacturing companies in Kenya. Food and beverage manufacturing firms are made up of both local and international

companies, according to (KAM 2017), and a large number of them are located in Nairobi County, which is home to the Kenya Association of Manufacturers.

According to Okello (2010), the food and beverage industry is divided into packaging companies, edible fats and oil companies, dairy and meat companies, grain milling companies, wines, beer, spirit companies, and fish processing companies. The food and beverage manufacturing sector is projected to make a significant contribution to the government's big four agenda realization and being seen as the country's economic growth lever. However, the sector has seen a drastic drop in results, with annual losses of $50 million in recent years. According to Hervani, Helms, and Sarkis (2015), the failure is supply chain management problems. As a result, a new supply chain management strategy is needed, so this research was conducted.

Research Gap

Kenya's food and beverage processing sector is critical to the country's economic development. According to Okello et al. (2014), the biggest problem is importing food from other countries, and the industry's production is still below average. According to several analysts and administrators, supply chain management techniques are critical to supplying chain efficiency and, as a result, to the overall performance of the enterprise.

The supply chain efficiency sector is confronted with dramatic shifts in the market climate and cost control, limiting supply chain executives' capacity to respond to these changes. There is more detail on supply chain management tactics than ever before, making it harder for supply chain leaders to see the big picture and execute the correct information. Despite the prevalence of demand-driven slogans, consumer intimacy is minimal, with companies becoming more linked to their vendors than their clients. Furthermore, there is no clear consensus about what constitutes a supply chain management concept. The supply chain management studies undertaken at various times and in various locations each concentrate on different market segments. According to Ilyas et al. (2020), there is still no consensus among the researchers on the most critical supply chain management solutions strategy and findings. According to Li et al. (2006), effective supply chain management techniques are essential to increase supply chain efficiency and, as a result, overall operational performance.

According to data, many food and beverage processing companies around the world are yet to realize their full potential in terms of supply chain management techniques. Many logistics administrators, for example, don't know how supply chain management practices build value for consumers, according to Daugherty (2011), so this part hasn't been thoroughly explored. The need for this research stems from these differences.

1.3 **Problem Statement**

Different analysts and industry leaders believe that a robust supply chain policy is essential for a company to expand and provide reliable service to its consumers. According to Basheer et al. (2019), the efficiency of a company's supply chain significantly impacts its growth. Tortorella et al. (2017) further contend that to succeed, companies must devote more time and attention to the variables that will increase their supply chain efficiency. This research aims to assist businesses in improving supply chain management by addressing supply chain strategies. Firms who don't grasp their supply chain operations and how they can be handled are more likely to experience operational dysfunction and lose clients (De Keyser et al., 2021).

According to (Sutduean, Joemsittiprasert, and Jermsittiparsert (2019), supply chain management has become so critical that companies must have well-coordinated and organized supply chain management strategies to achieve and prosper in their respective industries. Many companies' adoption of supply chain management techniques and supply chain efficiency metrics, according to Cherrafi et al. (2018), is typically the first step toward their growth. These feelings were echoed by Lima-Junior and Carpinetti (2017). They discovered in their analysis that for a company to reach its total supply capacity, it must ensure customer loyalty by maintaining a practical and secure supply chain.

This research would discuss the critical issue is a lack of comprehensive data and literature on various supply chain solutions and their effectiveness in improving corporate supply chain efficiency. The majority of research has concentrated on supply chain policies and their effect on rising profitability for various businesses (Rezae, 2018; Panda &Modak, 2016; Gandhi et al., 2017; Sathish, 2019). The use of supply chain strategies to improve supply chain efficiency is rising globally, especially in the food and beverage industry. As a result, it's critical to figure out if using supply chain tactics increases supply chain efficiency, as said. A general overview of many Kenyan food and beverage companies may aid in resolving this research issue.

This research aims to provide substantial advice on the various supply chain management solutions that, according to Li et al. (2006), are not currently being pursued but may further increase supply chain efficiency. The report would equate the effectiveness of these techniques to those currently in use.

1.4 **Research Objectives**

1.4.1 **General Objective**

This research aims to critically examine the different supply chain management strategies employed in the food and beverage industry in Kenya and to identify how effective these strategies are in ensuring adequate supply chain performance.

1.4.2 **Specific Objectives**

1. To examine the effects of supply chain collaboration on supply chain performance in Kenya's food and beverage industry.
2. To examine the effects of supply chain agility on supply chain performance in Kenya's food and beverage industry.
3. To examine the effects of supply chain integration on supply chain performance in Kenya's food and beverage industry.

1.5 **Research questions**

The research project will seek to answer the following questions.

1. What are the effects of supply chain collaboration on supply chain performance in Kenya's food and beverage industry?
2. What are the effects of supply chain agility on supply chain performance in Kenya's food and beverage industry?
3. What are the effects of supply chain integration on supply chain performance in Kenya's food and beverage industry?

1.6 **Justification of the study**

A research study's primary goal is to include information that can be used to make decisions (Simon& Goes, 2013). This research will benefit the food and beverage industry because it aims to discover new supply chain management techniques to improve supply chain efficiency, especially in Kenya's food and beverage industry. This research study would primarily benefit non-food companies, educational institutions, and other scholars. This report will improve the limited literature on supply chain management techniques and their effect on supply chain efficiency.

The study of supply chain management strategy and efficiency has become increasingly relevant in recent years, particularly in technological advancements in the business world. This research will help food and beverage companies in Kenya and around the world because it will specifically illustrate the advantages and obstacles they will face while attempting to reach high standards of supply chain success using supply chain management techniques.

1.7 **Scope of the study**

According to Simon and Goes (2013), the study's scope is described as "the conceptualization of the degree to which the research seeks to explore in terms of the study field." The aim of the analysis's scope is typically to set limits for the study's main variables. It may also cover the study's delimitations, which explicitly state the areas in which the research cannot go.

This research aims to improve supply chain management practices in Kenya's food and beverage industry. While there is enough research on the efficacy of supply chain management techniques for benefit maximization, the same cannot be said for supply chain efficiency. The studies for this thesis would delve into modern supply chain technologies in depth. The majority of the literature for this report will come from Kenya's food and beverage market, both online and physically, obtained from various industry firms.

1.8 **Chapter Summary**

This chapter has helped cover the usual contents of any study paper's first chapter. It entails the background of the study clearly outlining the reason why the researcher chose this topic for research, the statement of the problem, the objectives the research aims to achieve, the questions the researcher seeks to answer by the end of the study, the justification of the study and the study scope. The chapter concludes with a detailed definition of critical terms used. The next chapter,

2, is expected to cover a detailed review of existing literature, theoretical models, empirical review, and research gaps before concluding with the conceptual framework.

CHAPTER TWO: LITERATURE REVIEW

2.1 **Introduction**

According to Joyner, Rouse, and Glatthorn (2018), chapter two of a research paper summarizes the literature related to the study intent and that aids in answering the research questions identified in chapter one of the study. The re-evaluation of the literature is carried out to exclude any replication of material about the research project.

The fundamental goal of this study's literature review is to include a theoretical examination of supply chain management strategies and supply chain efficiency, as well as an explanation of how the various supply chain management strategy variables are applicable, and finally, the conceptual structure and its variables.

2.2 **Theoretical framework**

This segment examines the various hypotheses and models that illustrate how supply chain management solutions affect supply chain success in the Kenyan food and beverage industry. According to Ngumi (2013), theories are intended to offer a comprehensive explanation of an event, and every study's researcher should be familiar with the views that apply to his research region. Theories aid in the analysis direction by determining what to calculate and what statistical associations to look for (Defee et al., 2010). As a result, the theoretical context aids the researcher in better understanding the study's variables and selecting an appropriate test design.

2.2.1 **Supply Chain Operations Reference Model (SCOR)**

The supply chain operations guide model was created as a cross-industry, standard diagnostic tool for supply chain management by the supply chain management council. At higher levels of modeling abstraction, the process, according to CSC (2008), can be extended to the flow of all knowledge and goods in the supply chain. According to Zailani et al. (2012), the paradigm offers a unique system in that it connects individuals, best practices, success indicators, and procedures into a single structure. According to Trkman and McCormack (2009), the system facilitates efficient coordination among supply chain stakeholders and improves the impact of supply chain management on supply chain efficiency.

The SCOR model identifies market processes that are tied to the various stages of ensuring consumer demand fulfillment. The SCOR model's highest level includes four business process types: Plan, Source, Create and Deliver. The model aids in creating a system of business processes that provides for standard definitions and interdependencies between them. According to Huan et al. (2004), the critical goal of this is to accurately map supply chains and supply chain processes of different complexity across various business verticals.

This theory is relevant to this research because it establishes a basis for measuring supply chain efficiency. The offered structure serves as a strategic method for defining, interacting, evaluating, executing, and fine-tuning dynamic supply chain management processes. If all supply chain members who help enforce the SCOR model follow the structure, the model has standardization benefits.

The SCOR model has been criticized for being too general to explain any particular sector or organization's peculiarities. Its absolute brilliance, though, is revealed in the lack of specificity. Most organizations prefer to characterize their operations using IT system entries, Jargon, and other words specific to either their clients, products, or facilities one or two tiers below SCOR's systems, typically the job stage. Supply chain managers collaborate with subordinates from other organizations by masking particular protocols inside "black boxes" to make it easier to distinguish the key activities, data, and participants involved in orchestrating multi-enterprise processes. According to Theeranuphattana and Tang (2007), the SCOR model's significant drawback is the many measurements available at each of the three process stages. However, though Theeranuphattana and Tang (2007) argue that this is a drawback, it is critical to remember every supply chain's fundamental characteristics: costs, assets, responsiveness, reliability, and durability.

2.2.2 **The competency theory**

According to Ryan, Emmerling, and Spencer (2009), global competency-based teaching has aided in implementing many emerging principles, the most important of which is the skill principle. The definition of competence has resulted in a slew of misunderstandings around the world. Until the learners are expected to identify the relationship of the concept from the problem identified to the required knowledge, from the knowledge necessary to the performance criteria using different skills as the connection, and finally from the performance criteria to the

central concept, the tutor assists the learners in identifying and selecting the required images from the relevant domain knowledge.

According to Ryan et al., success standards are determined by a person's competency or capability with the job's demands, processes and mechanisms, and organizational climate (2009). Competencies are characterized as the skills that influence the intrinsic affective value and frequency at which complex behavior execution and cognitive, affective processes are carried out concerning personality constructs and motives. As a result, competencies refer to what an individual can and what they want to do. For accurate job success estimation, all variables must be weighed. Since motive is such a vital part of the theoretical structure of competencies, abilities vary significantly from competencies. To put it another way, competencies reveal what a person can and is prepared to achieve, while skills show what a person is capable of.

This theory applies to this research because it is conveniently related to worker's competency, which is a supply chain variable. According to the principle, a company will attain higher results if the employees' competencies are aligned with the job's requirements. For example, whether employees in charge of procurement operations in a given enterprise are competent enough, the organization's procurement efficiency can improve.

Despite its importance, the competency paradigm is beset by long-running debates. Its biggest flaw has been described as its oversimplification of the dynamic existence of management positions. The competency model assumes that managerial roles are uniform and uniform in its quest for optimal successful management. Such thinking has been compared to empirical management theory, becoming largely outdated in today's society. According to Antonacopoulou (1996), the competency theory's attempt to capture all of the managerial job mysteries into collections of "to get" and "to do" lists is an embarrassment to the executive class.

The competency model has also been chastised for assuming that triumphant success and competencies are inextricably related. This critique is mainly directed at the British MCI competence model, which is concerned with assessing managerial results against predetermined criteria with the sole purpose of accrediting success according to predetermined competence thresholds. The practice lacks the fact that effective management also includes intangible and difficult-to-measure components. When the British MCI approach decided to concentrate on the production, it missed out on identifying the different aspects in which managers were

professional. The MCI model's widespread acceptance in the United Kingdom shows that there is only one path for administrators to become proficient, which the model suggests is through its accreditation.

Finally, the paradigm has been chastised for the lack of consensus in the concept of competency. For example, prominent opponents of the competency hypothesis, Jubb and Robotham (1997), describe the theory's rhetoric as "confusing and confused" and declare that the approach is a myth whose truth has not been sufficiently demonstrated. It is important to note that the disparity in description is due to the discipline's multidisciplinary existence. Competency theory arose from the fields of politics, human resources, education, and psychology. Each domain had its own set of priorities that influenced how it approached the various dimensions discussed.

2.3 **Empirical Review**

2.3.1 **Effects of supply chain collaboration on supply chain performance**

Collaboration among supply chain participants is referred to as supply chain collaboration. The three critical supply chain coordination techniques discussed in this section are client relationships, provider alliances, and communication with rivals.

2.3.1.1 **Customer Relationships**

All supply chain management techniques aim to add value to their consumers. The production of value for immediate downstream customers and their customers, and eventually the end consumer, improves supply chain efficiency. To improve supply chain efficiency, Flint (2004) recommends that businesses should concentrate on customer relations. According to Li et al. (2004) and Daugherty (2011), customer relationship management involves, but is not limited to, developing long-term interactions with clients, handling feedback, and customer loyalty.

According to Ramsay (2001), organizations that include their customers in matters relating to their services' quality improve their supply chain efficiency in terms of accuracy and distribution speed.

2.3.1.2 **Supplier partnerships**

According to Walker et al. (2000), suppliers are connected by long-term relationships. To achieve adequate supply chain efficiency levels, the company must handle its vendors strategically in terms of consistency, expense, and versatility.

According to a study conducted by Vivek et al. (2011) in India on supplier relationships and supply chain efficiency, supply chain management is a valuable method for strategic management in companies because it has a significant impact on supply chain performance. The study investigated the links between supply chain management and supply chain efficiency. According to the study's findings, improvements in supplier relationships are a critical step toward improving supply chain efficiency—the thesis is based on India's small manufacturing businesses.

An analysis of the effects of strategic supplier partnerships on supply chain efficiency in the energy market, focusing on inferential and informative figures in KPC Ltd. According to the reports' results, supplier relationships have aided in the improvement of networking and coordination between companies and vendors, thus improving the efficiency of the company's supply chain.

According to Li et al. (2004), the secret to successful supplier partnerships is confidence. They point out that accountability builds trust and that the organization should ensure accurate and timely information exchange among supply chain participants.

2.3.1.3 **Cooperation with competitors**

According to Yusuf et al. (2004), businesses must collaborate with their rivals to achieve interdependence across the supply chain. According to Yusuf et al. (2004), companies can delegate certain aspects of production to competitors.

2.3.2 **Effects of supply chain agility on supply chain performance**

According to Naylor, Naim, and Berry (1999), resilience is the ability to use business intelligence to leverage resources that a company finds profitable in a volatile market. Supply chain resilience is the key to achieving supply chain efficiency. A company must be market-driven and devote more resources to product analysis. This will enable businesses to respond

rapidly to changing consumer demands, changing competitive dynamics, and rising environmental turbulence levels.

To be entirely flexible, a supply chain must be demand aware, method complex, and highly networked (Ketchen and Giunipero, 2004).

2.3.3 **Effects of supply chain integration on supply chain performance**

According to Power (2005), supply chain integration attempts to connect each supply chain aspect to improve decision-making. As a result, to achieve supply chain efficiency, the functions should be connected to achieve a shared objective. According to Li et al. (2004), supply chain integration entails a set of operations carried out by a company to provide value to its consumers and achieve supply chain efficiency.

2.3.3.1 **IT infrastructure integration**

According to Li et al. (2006), supply chain convergence necessitates collaborators sharing knowledge, developing optimal and internationally recognized strategies, and optimizing inventory staging and flow by maximizing resource visibility and streamlining financial operations.

According to Rai et al. (2006), to improve supply chain efficiency, companies must first cultivate the ability to absorb, incorporate, reconfigure, and release services rooted in their cultural, systemic, or social background.

2.3.3.2 **Supply chain link**

Upstream mechanisms, especially those oriented toward integrating the production-logistic process, are involved in supply chain relationships. To differentiate themselves and strengthen their sales chains, manufacturing companies are focused on excellence in delivery services.

According to Woodruff (1997), the supply chain takes up 60 percent to 80 percent of an average company's cost structure, indicating that supply chain integration can increase supply chain efficiency.

2.4 **Conceptual framework**

Supply chain management techniques (collaboration, agility, and integration) are used to increase supply chain efficiency by optimizing the supply chain and its partners' integrated operations. In isolation, the techniques would not be able to lead to improved supply chain efficiency successfully. According to Nicholas (2004), combining the three supply chain management techniques lets businesses reach high supply chain success levels.

Conceptual framework model

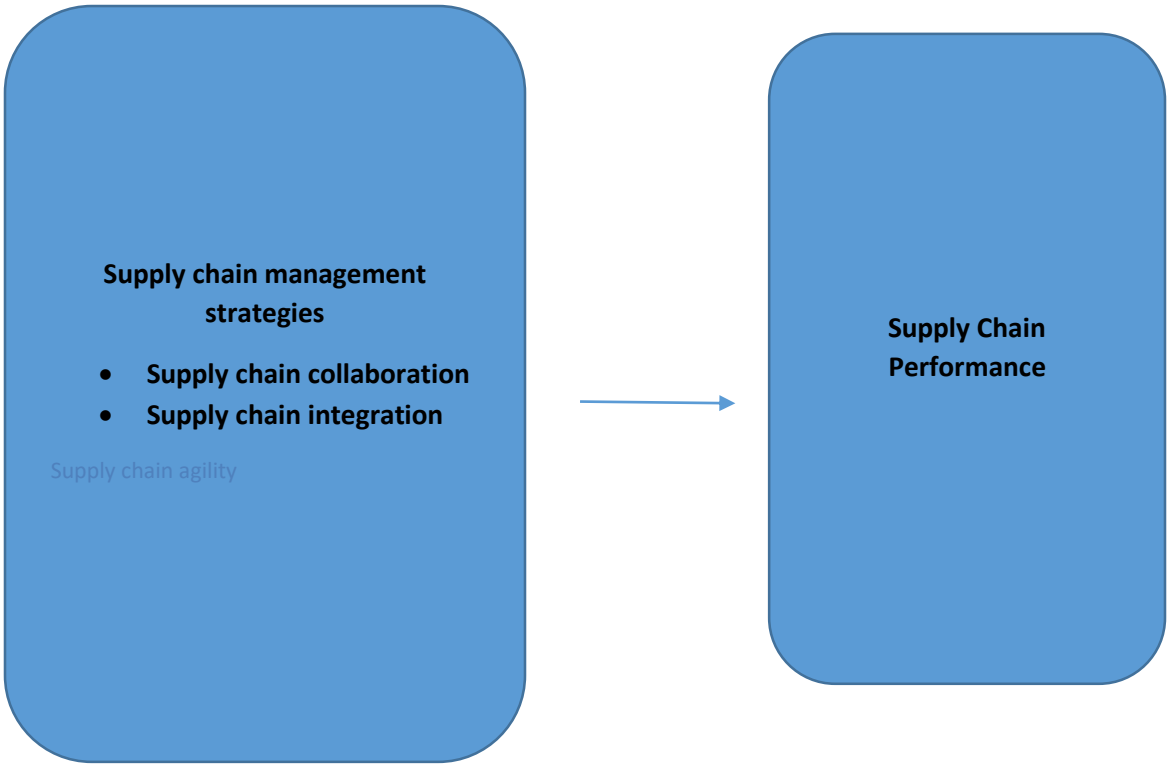


Figure 1: Model of conceptual framework

(Source: Author, 2021)

2.1 Operationalization of variables

	Variables	Operation definition	Source
Dependent variable	**Supply chain performance**	Supply chain performance is the performance that is gained by the organization after implementation of different supply chain management strategies? It could be measured as both as a positive or a negative and usually has an influence on the overall performance of the firm.	Annan et al. (2013)
Independent variables	**Supply chain collaboration**	They are the co-operations within a supply chain.	Walker et al. (2000)
	Supply chain integration	Supply chain integration is the effort put in place to link all the participants of the supply chain in an attempt to realize better decision making and to create supply chain visibility.	Power (2005)
	Supply chain agility	Supply chain agility is the use of the knowledge on the market to exploit possible profitable opportunities.	Naylor et al. (1999)

Table 1: Variables Operationalization

CHAPTER THREE: METHODOLOGY

3.1 Introduction

The methodology used in this study was presented in this chapter. This included the research style, target population, sample, sampling methods, data processing techniques, and data analysis techniques that were used in the study.

3.2 Research design

This study used a link analysis design and an explanatory survey to look at the impact of supply chain management techniques on supply chain success in the Kenyan food and beverage industry to better understand the various supply chain management activities by gathering relevant data. According to Cooper and Schindler (2011), surveys are the most versatile means of collecting knowledge on supply chain management's fundamental motivations.

3.3 Target Population

According to Kothari (1990), the target population is a list of elements from which the sample is drawn. The population for this analysis included all food and beverage companies in Nairobi and other major Kenyan cities that are members of the Kenya Association of Manufacturers. The fundamental explanation for this selection of firms was that, according to Bolo (2011), these companies were most likely to demonstrate the most influential supply chain management philosophies and use the best supply chain management practices.

3.4. Sampling Frame

The study's sampling frame consisted of around 140 food and beverage companies in Kenya listed in the Kenya Association of Manufacturers directory. Small businesses and public sector (government-owned) businesses were excluded from the report because most small businesses lack supply chain networks, and public sector businesses, according to Bolo (2011), have strict policies and processes that make accessing information difficult.

3.4.1 Sampling Technique

This study's sample was not homogeneous, and it was decided by stratified sampling. Elements were split into big and medium-sized enterprises to ensure that elements from each sub-

population were covered. According to Cooper and Schindler (2011), this method is optimal because it offers more precise knowledge about each component's components. The target group was split into eighty large firms and sixty medium-sized firms to obtain the optimal one hundred and forty sample size.

Each of the sixty medium-sized companies and eighty big companies was assigned a number on a sheet of paper, meaning that each factor had a fair chance of being chosen.

3.4.2 Sample Size

A total of 140 food and beverage companies were chosen for this study, with roughly 80 prominent companies and 60 medium-sized companies. This number was considered sufficient to adequately reflect the target population since it provided a broad enough sample size. The sample size chosen represented roughly 40% of Nairobi's food and beverage manufacturing companies (KAM, 2019). Since all of the companies selected for the study were listed in the Kenya Association of Manufacturer's registry, their physical and telephone addresses were readily available.

3.5 Data Collection Method

The use of primary data collection was integrated into this study. The target respondents were supply chain managers with various names such as distribution managers, logistics managers, supply chain managers, logisticians, and production managers in their respective departments. The researcher made appointments to conduct the questionnaires at the food and beverage manufacturing companies. The filling of the visiting sessions took about 45 minutes. The study's questionnaires had both semi-structured and structured questions, allowing for gathering ideal and consistent data across all companies. Data collection took slightly more than a month. The questionnaires were submitted to the various organizations with an introductory letter and a message requesting that they participate in the analysis. The letter aimed at clarifying the study's purpose and ensuring the respondents' confidentiality and a promise to discuss the study's results with them.

3.6 Data Analysis and Presentation

The quantitative approach was used to analyze the data gathered in this study. The questionnaires were coded according to each research attribute to ensure minimal errors and ease of interpretation. The data was analyzed using the Statistical Package for Social Sciences (SPSS) software. Tables and maps were used to display the details graphically. The thesis then examined the relationship between supply chain management methods and supply chain efficiency using descriptive statistics such as mean, standard deviation and inferential statistics.

3.7 Research Quality

3.7.1 Validity

Validity is described by Anderson et al. (2004) as determining whether collected data supports the calculation that the research instrument aims to accomplish. The researcher's validity determines the degree to which the analysis results are authentic.

3.7.2 Reliability

Kirk and Miller (1986) described reliability as the degree to which a test accurately tests everything it is supposed to measure. On the other hand, Joppe (2000) describes reliability as the degree to which a study's observations are taken into account over time and yield equal and predictable outcomes. In quantitative analysis, there are three forms of reliability, according to Kirk and Miller (1986).

- The extent to which a measurement remains the same despite repeated tests.
- The measurements similarity within a given period.
- The measurement stability over time

3.8 Ethical Considerations

To complete this report, the researcher followed ethical guidelines. Each respondent relied on for this study gave their full consent, and their participation was totally voluntary. The questionnaires that were submitted for this survey were supplemented by an introductory letter that contained a recommendation that the respondents participate in the study. The attached letter clarified the research's intent and reminded respondents of their confidentiality and privacy, as well as a promise to share the study's results with them. To ensure the study's accuracy and

consistency, the researcher analyzed the results with the most remarkable objectivity possible. The researcher also used the APA referencing style to recognize any works by other researchers and writers.

Chapter summary

This chapter presents the research methodology employed in this study. The methodology covered the research design, population, sampling design, data collection methods, the procedures used during the study and the data analysis methods used. The study used the quantitative research method i.e. questionnaires as the primary tool for data collection. A sample of approximately one hundred and forty food and beverage manufacturing firms was expected to be drawn for the study.

CHAPTER FOUR:

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.0. Introduction

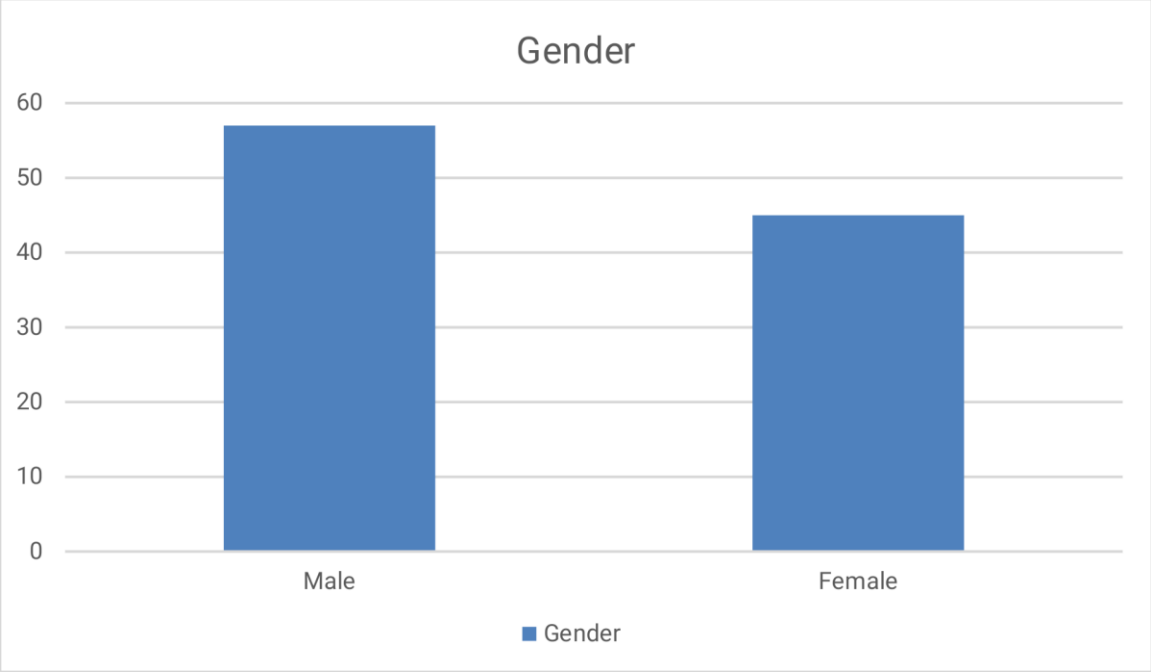
The aim of this chapter is to present the study's observations, explanations, and conclusions in accordance with the study goals outlined in chapter one. The impact of supply chain management strategies on supply chain efficiency in the food and beverage industry in Nairobi, Kenya is also discussed in this chapter. One hundred and two of the one hundred and forty questionnaires sent out for this study were completed and returned, representing an answer rate of 73 percent. This rate was considered suitable for the analysis by the researcher.

4.1. Background information

4.1.1 Gender of respondents

The researcher requested the respondents to indicate their gender in the questionnaires to help determine whether the information provided had any significance differences in views with regards to their respective genders.

Respondents' gender



(Source: Author, 2021)

Gender	Frequency	Percent (%)	Valid Percent (%)	Cumulative percent (%)
Male	57	55.9	55.9	55.9
Female	45	44.1	44.1	100
Total	**102**	**100**	**100**	

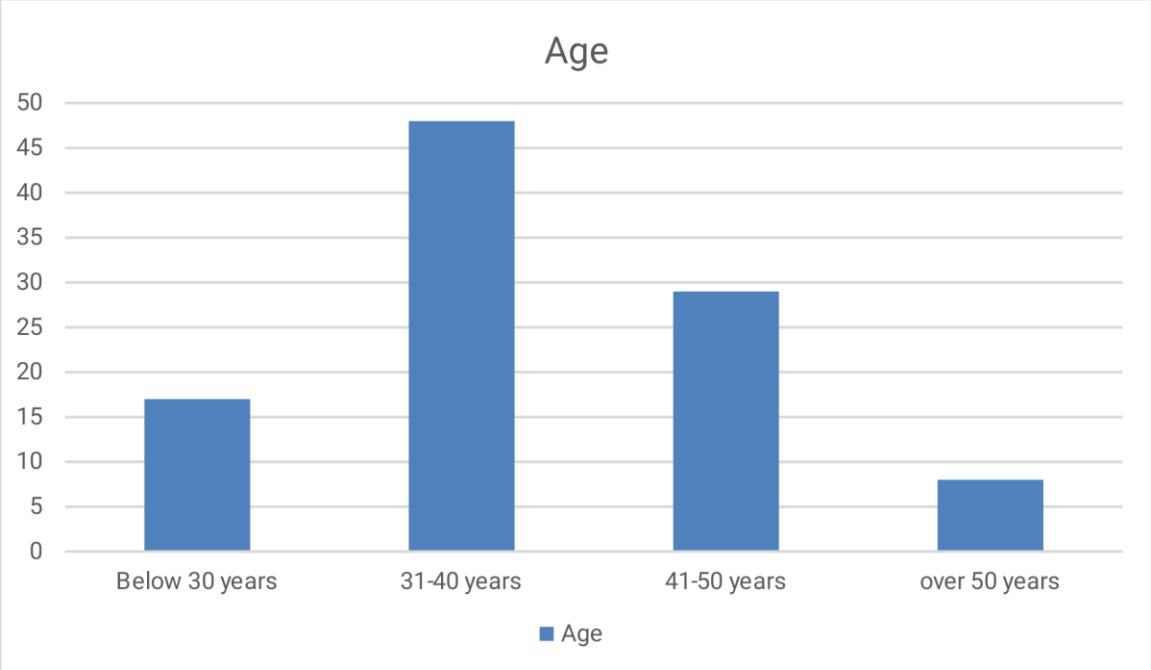
(Source: Author, 2021)

The results above indicate that 55.9% of the respondents were male while 44.1% were female.

4.1.2. Age of respondents

The respondents were required to indicate their ages as this would allow the researcher to determine the maturity of the answers provided with regards to experience and knowledge gained in life.

Respondents' age



(Source: Author, 2021)

Respondents' age

Age	Frequency	Percent (%)	Valid percent (%)	Cumulative percent (%)
Below 30 years	17	16.7	16.7	16.7
31-40 years	48	47.1	47.1	63.8
41-50 years	29	28.4	28.4	92.2
Above 50 years	8	7.8	7.8	100
Total	**102**	**100**	**100**	

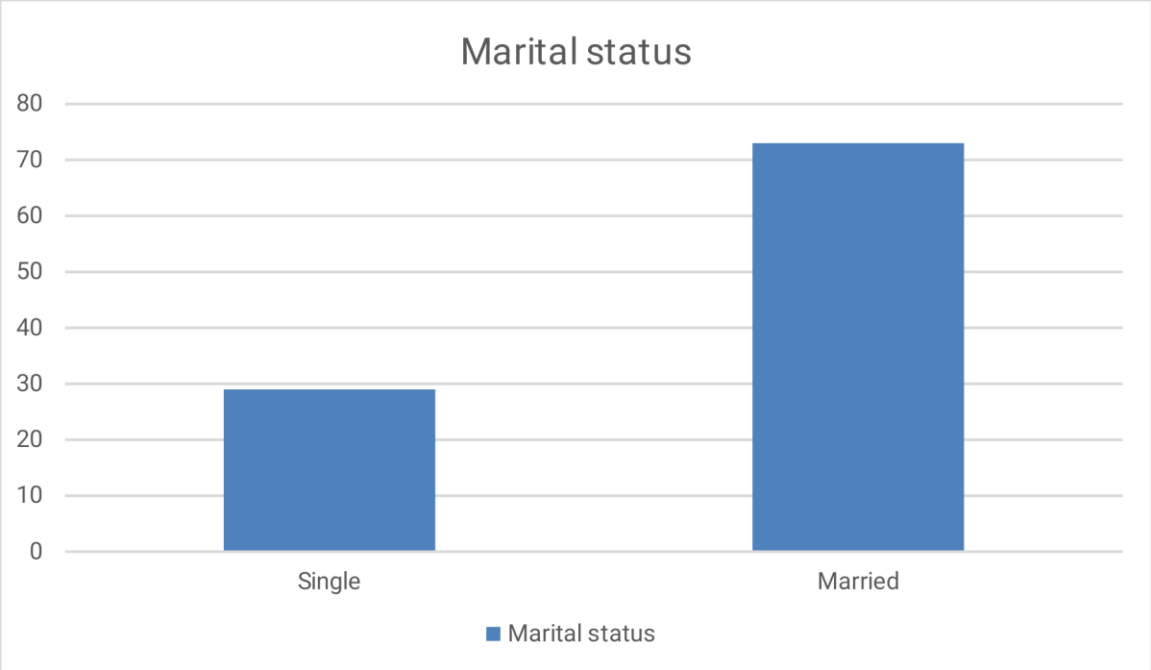
(Source: Author, 2021)

The results above highlight that a majority of the respondents to this study were aged between 31 to 40 years representing 47.1% of the respondents. This was followed by those aged between 41 to 50 years which represented 28.4% of the respondents. 16.7% of the respondents were below 30 years of age while only 7.8% of them were over 50 years.

4.1.3 Respondents' marital status

The researcher included a section where the respondents were required to indicate their marital status. This would enable the researcher to understand whether the different people categories regarding marriage had either the same or different points of view regarding the study phenomenon.

Respondent' marital status



(Source: Author, 2021)

Respondents' marital status

Marital status	**Frequency**	**Percent (%)**	**Valid percent (%)**	**Cumulative percent (%)**
Single	29	28.4	28.4	28.4
Married	73	71.6	71.6	100
Total	**102**	**100**	**100**	

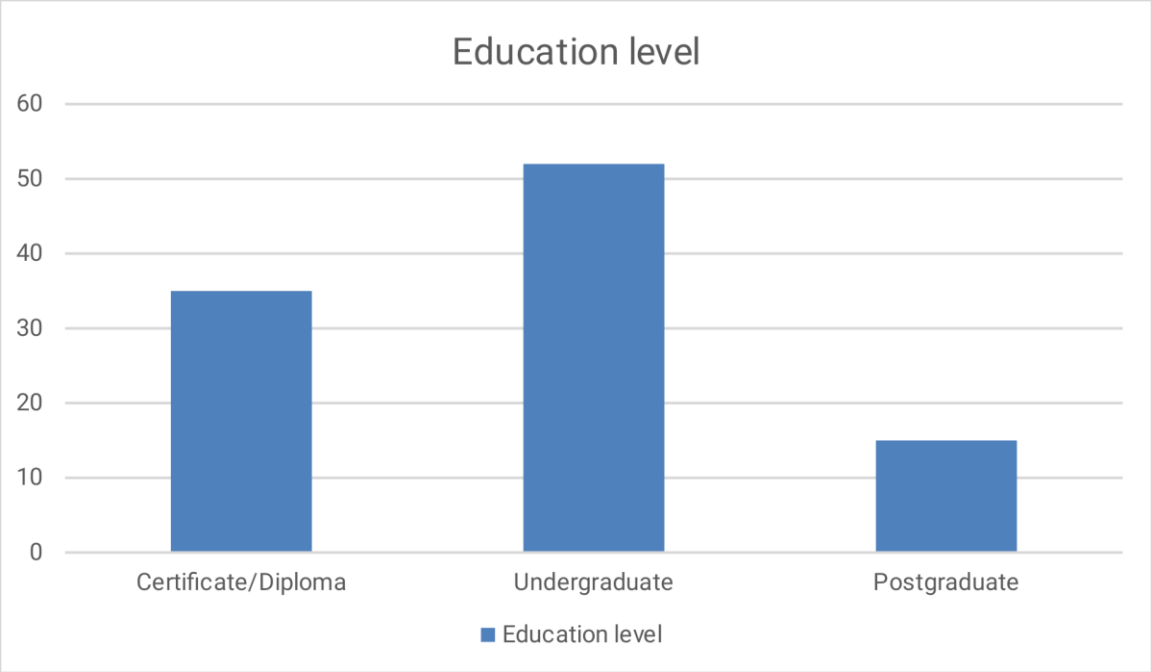
(Source: Author, 2021)

The presentations above indicate that a majority of the respondents at 71.6% were married and that only 28.4% representing 29 of the respondents were single as at the time of the study.

4.1.4. The respondents' education level

In an attempt to ascertain the respondents' education level, the questionnaires had a section where respondents were required to indicate the highest level of education they had attained as at the time of the study.

Respondents' education level



(Source: Author, 2021)

Respondents' education level

Education level	**Frequency**	**Percent (%)**	**Valid percent (%)**	**Cumulative percent (%)**
Certificate/Diploma	35	34.3	34.3	34.3
Undergraduate	52	51	51	85.3
Post-graduate	15	14.7	14.7	100
Total	**102**	**100**	**100**	

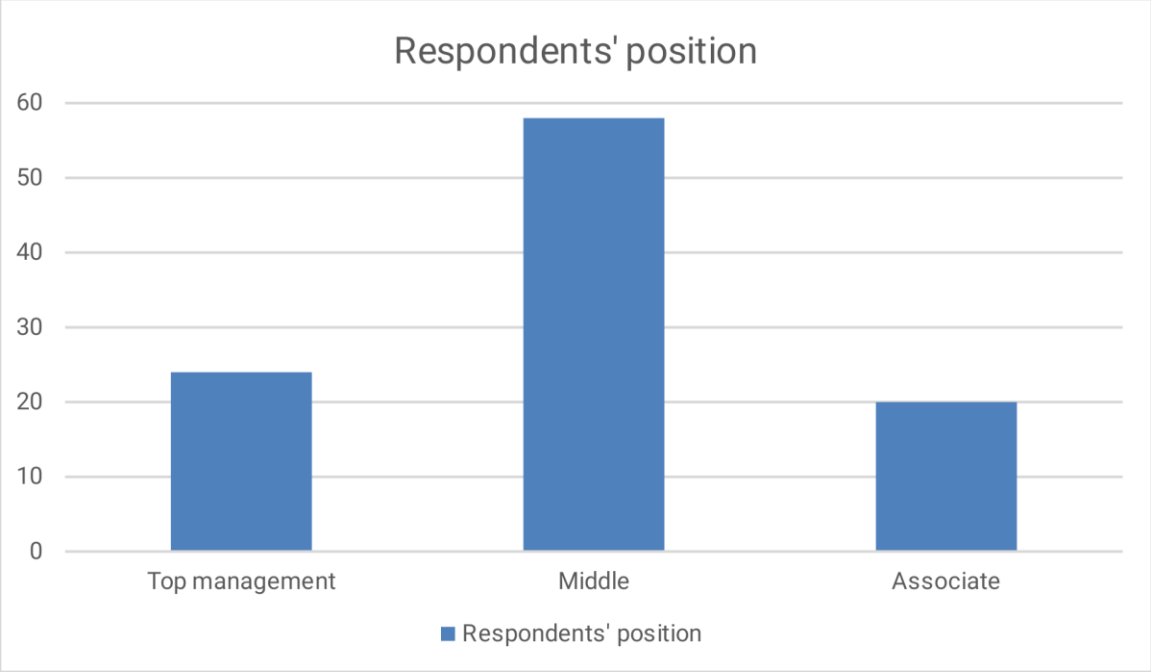
(Source: Author, 2021)

The presentations above indicate that a majority of the respondents at 51% had acquired undergraduate degrees. This represented 52 of the total respondents. 34.3% representing 35 respondents had acquired diplomas and certificates while only 14.8% of the respondents had attained postgraduate degrees. The findings assured the researcher that all the respondents had a reasonable educational background hence the results collected were reliable and relevant.

4.1.5. Respondents' position in their respective food and beverage firms.

The questionnaires had a section that the researcher required the respondents to indicate the ranks they held within their respective institution. This was to enable the researcher to ascertain the respondents' views based on their individual positions.

Respondents' position



(Source: Author, 2021)

Respondents' position

Position	**Frequency**	**Percent (%)**	**Valid percent (%)**	**Cumulative percent (%)**
Top management	24	23.5	23.5	23.5
Middle	58	56.9	56.9	80.4
Associate	20	19.6	19.6	100
Total	**102**	**100**	**100**	

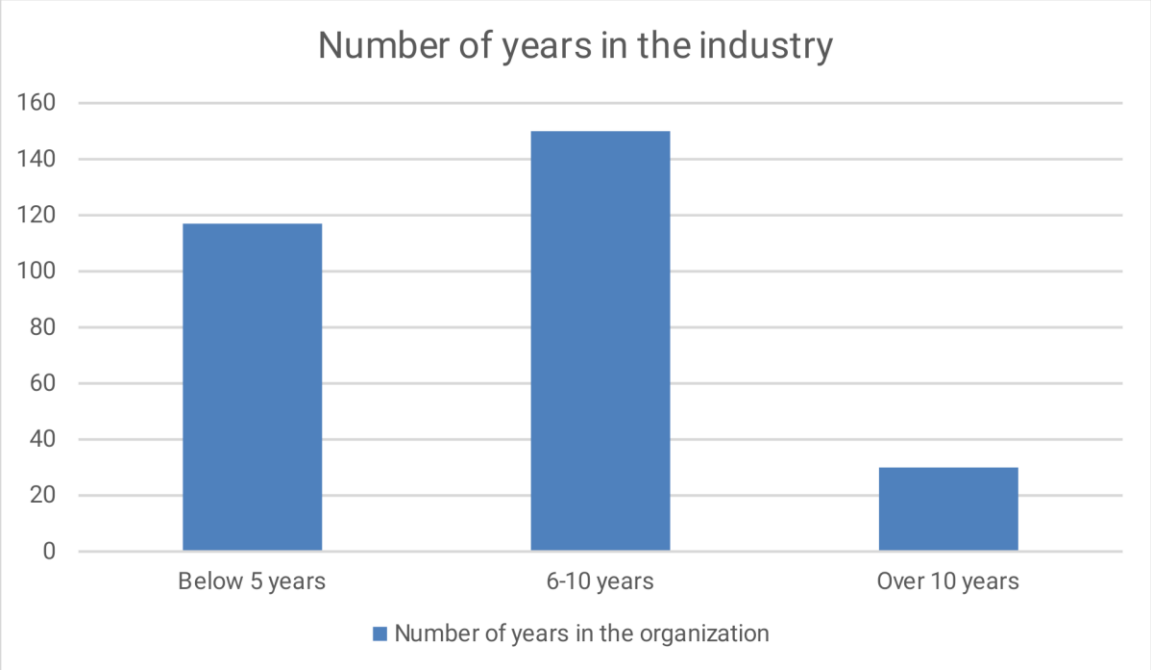
(Source: Author, 2021)

The presentations above indicate that 56.9% of the respondents held middle level positions in their respective food and beverage firms. This was followed by 23.5% of the respondents who held top level management positions. Only 19.6% of them were associates as at the time of the study.

4.1.6. Respondents' years of experience in their respective food and beverage firms

In trying to ascertain the respondents' skill level in working in the food and beverage industry, the survey had a section where the respondents were requested to indicate the number of years they had worked in their respective organizations.

Respondents number of years in the food and beverage industry



(Source: Author, 2021)

Respondents' number of years in the food and beverage industry

Number of years in Bank of Africa	**Frequency**	**Percent (%)**	**Valid (%)**	**Cumulative percent (%)**
Below 5 years	40	39.2	39.2	39.2

5-10 years Over 10 years	52 10	51 9.8	51 9.8	90.2 100
Total	**102**	**100**	**100**	

(Source: Author, 2021)

The presentations above indicate that a majority of the respondents' at 51% had worked in the food and beverage industry for between 5-10 years. This was followed by 39.2% of the respondents who had worked for less than 5 years. Only 9.8% of the respondents had worked more than 10 years in the food and beverage industry as at the time of the study.

4.1.The effect of supply chain management strategies on supply chain performance in the food and beverage industry in Kenya

4.1.1. The effects of supply chain collaboration on supply chain performance in the food and beverage industry in Kenya

This study's first objective was to determine the effect of the supply chain collaboration on supply chain performance within the food and beverage industry in Kenya. The responses were placed on a five Likert scale ranging from 1-5 where ≤1.5=strongly disagree, 1.5≤2.5=disagree, 2.5≤3.5= moderately agree, 3.5≤4.5=agree, and 4.5≤5=strongly agree. The findings were as shown below.

Likert rating of the effects of supply chain collaboration on supply chain performance in the food and beverage industry in Kenya

	Strongly agree		**Agree**		**Somewhat agree**		**Disagree**		**Strongly disagree**		**Mean**
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	
My organization has included channels that are specifically geared towards	15	**15**	46	**45**	34	**33**	4	**4**	3	**3**	***3.6***

ensuring that all the supply chain participants are dependent to each other											
My company ensures that there is active information exchange with suppliers	4	**4**	49	**48**	37	**36**	6	**6**	6	**6**	***3.4***
My company's relationship with its suppliers is long-term	15	**15**	47	**46**	37	**36**	0	**0**	3	**3**	***3.7***
My organizations ensures it safely keeps and updates a database of all it clients	9	**9**	34	**33**	47	**46**	4	**4**	8	**8**	***3.3***
My firm has a an interactive website where suppliers and customers give feedback	15	**15**	36	**35**	38	**37**	10	**10**	3	**3**	***3.5***

My organization ensures prompt management of customers' complaints	12	**12**	46	**45**	26	**25**	11	**11**	6	**6**	***3.4***
My company strives to build trust among its customers	9	**9**	51	**50**	33	**32**	3	**3**	6	**6**	***3.5***
Overall score	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.5**

Table 2: Organizational supply chain collaboration characteristics

(Source: Author, 2021)

The results from table 2 above highlight that the employees from the different food and beverage firms in Kenya were confident that their firms strived to establish long term relationships with their suppliers which returned a mean score of 3.7 followed by the fact that their companies had developed systems to ensure that the participants of their respective supply chains were dependent on each other returning a 3.6 mean score, their organizations strived to build trust among their customers and that their firms have interactive websites where they receive feedback returning a mean score of 3.5 each.

The overall mean score was 3.5 indicating that on average the respondents agreed that their organizations strived to build sufficient collaboration within their respective supply chains.

4.1.2. The effects of supply chain agility on supply chain performance in the food and beverage industry in Kenya

This study's second objective was to clearly ascertain the effects of supply chain agility on supply chain performance in the food and beverage industry in Kenya and supply chain performance. The findings were as shown below.

Likert rating of the effects of supply chain agility on supply chain performance in the food and beverage industry in Kenya

	Strongly agree		**Agree**		**Somewhat agree**		**Disagree**		**Strongly disagree**		**Mean**
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	
My company's response to customers' demand for customized products is extremely quick	15	**15**	49	**48**	29	**28**	6	**6**	3	**3**	***3.7***
Most of the responsive changes in the organization are made in regards to the market place	15	**15**	35	**34**	34	**33**	12	**12**	6	**6**	***3.3***
My organization invests in product design and development	6	**6**	48	**47**	27	**26**	15	**15**	6	**6**	***3.3***
My organization is flexible enough	15	**15**	49	**48**	26	**25**	9	**9**	3	**3**	***3.6***

to adapt to any changes in the business environment											
Overall score	-	-	-	-	-	-	-	-	-	-	**3.5**

Table 3: Organizational supply chain agility characteristics

(Source: Author. 2021)

The results from table 3 above indicate that the employees of different food and beverage manufacturing firms in Kenya believed that their organizations were quick enough in response to customers' demand for customized products which returned a mean score of 3.7 followed by their belief that their organizations are flexible enough to adapt to any changes in the business environment returning a 3.6 mean score.

The overall mean score was 3.5 indicating that on average the respondents agreed that their organizations strived to quickly respond to any forces and to make quick decisions to ensure customers' convenience.

4.1.3. The effects of supply chain integration on supply chain performance in the food and beverage industry in Kenya

This study's final objective was to determine the impact of supply chain integration on supply chain performance in the food and beverage manufacturing firms in Kenya. The findings were as shown below.

Likert rating of effects of supply chain integration on supply chain performance in the food and beverage industry in Kenya

	Strongly agree		**Agree**		**Somewhat agree**		**Disagree**		**Strongly disagree**		**Mean**
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	
My organization has a	31	**30**	46	**45**	12	**12**	10	**10**	3	**3**	***3.9***

real time connectivity IT system that enhances information sharing											
My organization shares technology with it supply chain participants	28	**27**	43	**42**	6	**6**	22	**22**	3	**3**	***3.7***
My organization strives to ensure sufficient trust within the supply chain	12	**12**	34	**33**	26	**25**	18	**18**	12	**12**	***3.2***
My organizations delivery services are excellent	28	**27**	50	**49**	9	**9**	9	**9**	6	**6**	***3.8***
Overall score	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.7**

Table 4: Organizational supply chain integration characteristics

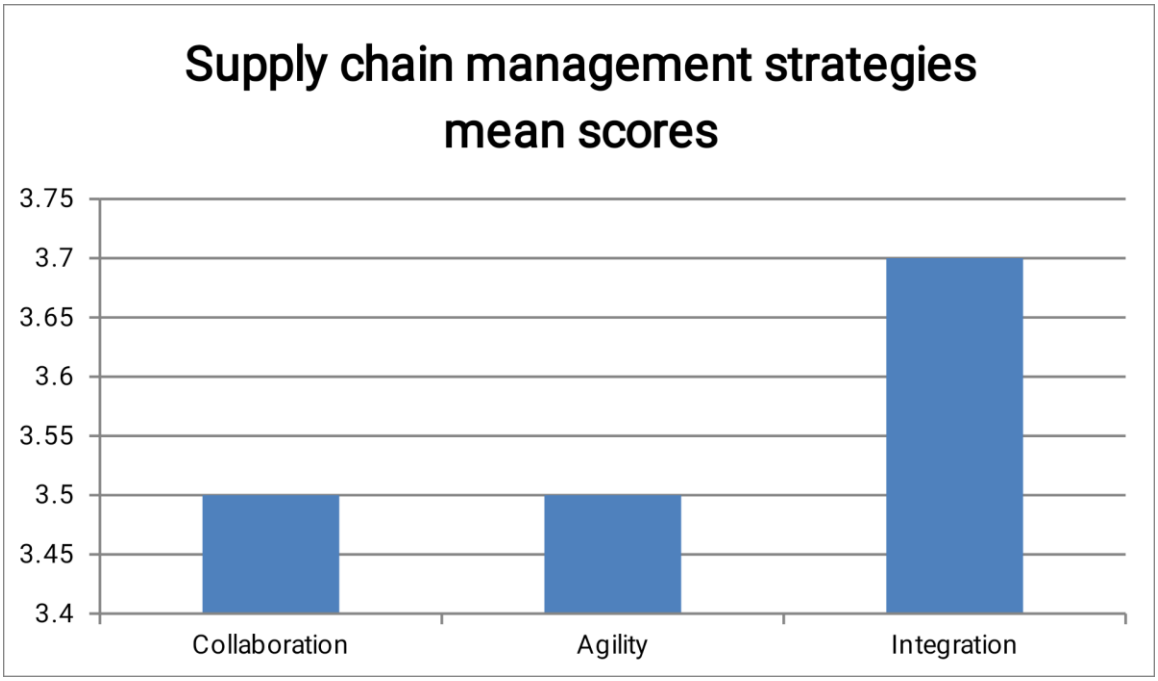
(Source: Author, 2021)

The results from the table above indicate that the food and beverage firms' employees were confident that their organizations had put in place systems that ensured sufficient information sharing returning a mean score of 3.9 followed closely by their belief in the statements that their organizations have excellent delivery services and that their organizations share technology with their supply chain participants each returning a mean score of 3.8 and 3.7 respectively.

The overall mean score was 3.7 indicating that the respondents agreed that their organizations strived to ensure sufficient integration within their supply chains in order to enhance performance.

4.1.4. Summary of the mean scores on the effects of supply chain management strategies

Summary of the mean scores on the effects of supply chain management strategies



(Source: Author, 2021)

Summary of the mean scores on the effects of supply chain management strategies

	OVERALL MEAN
Collaboration	3.5
Agility	3.5
Integration	3.7

Table 5: Supply chain management strategies mean scores summary

(Source: Author, 2021)

4.2.**Supply chain performance in the food and beverage industry in Kenya**

The respondents were requested in the survey to indicate on a Likert scale to what level they felt supply chain performance was being achieved in their respective organizations. The findings of the survey are as shown below:

Likert rating of level of supply chain performance in the food and beverage industry in Kenya

	Strongly agree		Agree		Somewhat agree		Disagree		Slightly disagree		Mean
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	
My organization sufficiently manages long term relationships with its suppliers	15	**15**	47	**46**	37	**36**	0	**0**	3	**3**	***3.7***
There is sufficient trust within my organization's supply chain	12	**12**	34	**33**	26	**25**	18	**18**	12	**12**	***3.2***
My organization is trusted by a majority of its customers	9	**9**	51	**50**	33	**32**	3	**3**	6	**6**	***3.5***
My organizations delivery speed on customers' orders is quick enough	28	**27**	50	**49**	9	**9**	9	**9**	6	**6**	***3.8***
My organization has achieved mutually profitable relationships with its customers.	15	**15**	49	**48**	29	**28**	6	**6**	3	**3**	***3.7***
Overall score	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3.6**

(Source: Author, 2021)

Results from the presentation above indicate that the respondents agreed their organizations sufficiently manage long term relationships with their suppliers returning a mean score of 3.7, that their organizations had achieved mutual positive relationship with customers at 3.7, that their organizations were quick enough in delivering their customers orders at 3.8 and that their organizations are trusted by a majority of their customers returning a mean score of 3.5.

The overall mean score was 3.6 showing that the respondents agreed that their organizations had made sufficient steps in trying to enhance supply chain performance.

4.3.**Correlation of motivation and employee retention**

The main objective of the study was to determine the relationship between supply chain management and supply chain performance. Inferential statistics e.g. Spearman's correlation and P-value were used to attain the objective inferential statistics

Variables			**Supply chain performance**	**Supply chain collaboration**	**Supply chain agility**	**Supply chain integration**
Spearman's Rho	**Supply chain performance**	Coefficient of correlation	1.000	0.779	0.611	0.813
		Sig. (2-tailed)	0.000	0.000	0.000	0.000
		N	32	32	32	32
	Supply chain collaboration	Coefficient of correlation	0.779	1.000		
		Sig. (2-tailed)	0.000	0.000		
		N	32	32		
	Supply chain agility	Coefficient of	0.611		1.000	

		correlation				
		Sig. (2-tailed)	0.000		0.000	
		N	32		32	
	Supply chain integration	Coefficient of correlation	0.813			1.000
		Sig. (2-tailed)	0.000			0.000
		N	32			32

Table 6: Spearman's correlation

(Source: Author, 2021)

To establish the extent to which the three independent variables (supply chain collaboration, supply chain agility and supply chain integration) correlated with supply chain performance the spearman's correlation of the variables were determined. The spearman's correlation coefficients found in table 4.12 above (.779, .611, .813) were all positive hence showing a strong and positive correlation with supply chain performance.

Since supply chain integration exhibited the highest coefficient, it indicated that it contributed more to the supply chain performance in the food and beverage industry in Kenya. It was closely followed by supply chain collaboration and supply chain agility with .779 and .611 coefficients respectively.

4.4.Inferential statistics of variables

Correlation and multiple linear regression analysis is used as inferential statistics. The relationship between the various variables considered in this study was revealed by correlation analysis. Co linearity was tested using Pearson and Spearman correlation coefficients. The co-integration approach was used for regression analysis. The significance tests for the overall model (R2) match and the independent variables were performed using the F-static and T-static methods, respectively.

4.5.1. Regression results

Linear regression analysis was utilized in the testing of the relationship between the above named supply chain management strategies and supply chain performance in the food and beverage industry in Kenya.

Model summary				
Model	**R**	**R^2**	**Adjusted R^2**	**Std. Error of Estimate**
1	.839	.703	.648	.7936

a. Predictors (Constant): Supply chain performance
b. Supply Chain Management Strategies (supply chain integration, supply chain collaboration, supply chain agility)

Table 7: Output summary

(Source: Author, 2021)

The coefficient of determination R^2 was .703 indicating that the independent variables analyzed in the study catered for up to 70.3% of the changes in supply chain performance in the food and beverage industry in Kenya. Other factors not analyzed in the study contribute the remaining 29.7% of the factors affecting supply chain performance in the Food and Beverage industry in Kenya. Further studies should therefore be done to determine the other variables that affect supply chain performance in the Food and Beverage industry in Kenya.

4.5.2. Regression coefficients

Regression coefficients work with their significance values as shown in the table to measure the impacts of independent variable on supply chain performance in the food and beverage industry in Kenya, which is a dependent variable. To try answer the model question on the proposed correlation between supply chain performance and the independent variables (supply chain integration, supply chain agility, supply chain collaboration), the results of the regression coefficient were represented in the table below;

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.(p)
		B	Std. Error	Beta	
	(Constant)	.703	.118	-	.104
	Supply chain collaboration	.779	.127	.145	.000
	Supply chain agility	.611	.075	.344	.000
	Supply chain integration	.813	.002	.319	.000

Table 8: Coefficients

(Source: Author, 2021)

Predictors: Supply chain collaboration, supply chain integration, supply chain agility.

Supply chain performance

The regression model for employee retention was;

$Y= \alpha + \beta 1\ SCCt+ \beta 2\ SCAt+ \beta 3\ SCIt + \varepsilon i$

Where:

Y = Supply chain performance

α = constant

$\beta 1, \beta 2, \beta 3$= Regression coefficients

SCCt = Supply Chain Collaboration at time t

SCAt = Supply Chain agility at time t

SCIt = Supply Chain Integration at time t

εi = Error term

Based on the coefficients found, the regression model was therefore;

Y= 0.703+0.779SCCt+.611SCAt+.813SCIt

The results indicate that supply chain integration at .813 had the greatest beta coefficient and was closely followed by supply chain integration and supply chain agility at .779 and .611 respectively.

95% level of confidence and 5% level of significance were used in testing Significance of the results. All the independent variables had a p-value of .000 indicating that the p-values were all significant at 95% confidence levels.

Chapter summary

An overview of the findings concerning the study questions and priorities was discussed in this chapter. The effects of supply chain coordination on supply chain performance were illustrated in the first section of this chapter, followed by the influence of supply chain agility on supply chain performance. The third segment looked at how supply chain convergence affects supply chain efficiency in Kenya's food and beverage industry. The findings were also analyzed, and the results were explicitly stated in the chapter. The following chapter would examine a review of these observations before moving on to the discussion, results, study shortcomings, and suggestions for future studies.

CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.1. Introduction

This chapter's key goal is to examine a discussion of the study's conclusions. The chapter is divided into five sections: an introduction, a summary of the conclusions, the study's conclusion, guidelines, and study limitations. The discussion section reflects on the research's main conclusions concerning the study's objectives. The main hypotheses from the study results will be presented in this segment, followed by recommendations for change. The study's shortcomings would also be addressed to illustrate the difficulties it encountered.

5.2. Summary and discussion of findings

5.2.1. Impact of Supply Chain Collaboration on Supply Chain Management

According to the results of the regression analysis done, collaboration within the supply chain had a coefficient of (.779) indicating that it had a substantial impact on the performance of the supply chain. When compared to the other independent variables analyzed in this study, contribution within supply chain was lesser that than of supply chain integration (.813) but a greater impact that than of supply chain agility (.611). The positive sign on the coefficient figure of supply chain collaboration implies that it has a positive correlation to supply chain management.

Upon testing the significance of the collaboration within the supply chain at (5%) significance level and (95%) confidence level, the researcher found supply chain collaboration to be significant at (95%) confidence level with a p-value of (.000). These results were similar to those of a study by Mofokeng and Chinomona (2019) that found the existence of a strong significance (.000) of supply chain collaboration as an antecedent of the performance of the supply chain. A study by Panahifar et al. (2018) also found a p-value of (.000) for suggesting that collaboration within the supply chain significantly impacted the performance of the supply chain but failed to find a direct link between the performance of an organization and external collaboration implying that an organization’s collaboration with its suppliers and customers would not have an effect on its performance.

According to the results by this study, collaboration within the supply chain has significantly contributed organizations achieving high levels performances of their supply chains. The results imply that for organizations to realize maximum impact the collaboration with their suppliers, they need to: work together willingly; understand the viewpoints of each other; set and seek to attain collective goals; and share not only resources but also information. 70% of the employees who took part in these studies agreed that their organizations have unique channels to enhance the dependence among the channel participants. These results were similar to those by Wu and Chiu (2018) that implied that creation of specialized channels within the supply chain greatly enhances the chain's participants' dependence.

The results also indicated that a majority of organizations strive to ensure they have permanent and long-term relationships with their customers. 70% of the respondents indicated that their organizations keep a database of a majority of their long-term customers.

A majority of the employees agreed that their organization strive to ensure sufficient trust amongst their customers. Approximately 65% of the respondents agreed that their firms wish to attain profitable relationships with their customers through ensuring they engage their customers in matter that related to the quality and design of their products.

5.2.2. Effect of supply chain agility on supply chain performance

According to the results of the regression analysis done, agility within the supply chain had a coefficient of (.611) indicating that it had a substantial impact on the performance of the supply chain. When compared to the other independent variables analyzed in this study, agility within supply chain was lesser than that of supply chain integration (.813) and that than of supply chain collaboration (.779). The positive sign on the coefficient figure of supply chain agility implies that it has a positive correlation to supply chain management.

Upon testing the significance of the agility within the supply chain at (5%) significance level and (95%) confidence level, the researcher found supply chain agility to be significant at (95%) confidence level with a p-value of (.000). These results were similar to those of a study by Bidhandi and Valmohammadi (2017) that found the existence of a strong significance of supply chain agility as an antecedent of the performance of the supply chain. A study by Altay et al.

(2018) also found a p-value of (.000) for suggesting that agility among the supply chain participants significantly impacted the performance of the supply chain.

According to the results by this study, agility among the supply chain participants has significantly contributed to organizations achieving high levels performances of their supply chains. The results imply that a majority of the organizations in the food and beverage industry in Kenya strived to enhance agility within their supply chains through ensuring they are market sensitive, networking efficiently and sufficiently integrating their processes. These results were similar to those by Mustafid, Karimariza and Jie (2018) that implied that through integrating these factors, organizations were most likely to achieve high levels of supply chain agility their improving the performance of their supply chains.

A majority of the employees agreed that their organization strive to ensure they have an information system that ensures corporation suppliers and customers through creating awareness and advising the supplier on the advantages of implementing technological advancements. Approximately 70% of the respondents agreed that their firms greatly invest on the research and development of their products especially through the use of technology.

5.2.3. The effect of supply chain integration on supply chain performance

According to the results of the regression analysis done, integration among the participant of the supply chain had the greatest coefficient at (.813) indicating that it had a substantial impact on the performance of the supply chain. The positive sign on the coefficient figure of supply chain integration implies that it has a positive correlation to supply chain management.

Upon testing the significance of the collaboration within the supply chain at (5%) significance level and (95%) confidence level, the researcher found supply chain integration to be significant at (95%) confidence level with a p-value of (.000). These results were similar to those of a study by Mofokeng and Chinomona (2019) that found the existence of a strong significance of supply chain integration as an antecedent of the performance of the supply chain. A study by Kumar et al. (2017) also found a p-value of (.000) suggesting that integration among an organization's supply chain participants significantly impacted the performance of the supply chain.

These results however negate those of a study by Jajja, Chatha, and Farooq (2018) on the effects of supply chain risk integration on performance of the organization and found that supply chain

integration had no significant effect to the performance of the organizations the researchers used for their studies.

According to the results by this study, integration among the participants of the supply chain has significantly contributed organizations achieving high levels performances of their supply chains through installation of Information Technology systems that ensure efficient flow of information all through the supply chain. The results imply that organizations in the food and beverage industry in Kenya have managed to streamline their operations thereby generally improving their performance. A majority of the respondents agreed that their organizations ensure that they share information with all their supply chain participants. A majority of the employees agreed that their organizations excel in their delivery services while approximately 80% of the respondents agreed that their firms worked to build trust within among the participants of their supply chains.

The study therefore agreed with Mofokeng and Chinomona (2019) that sufficient flow of products cannot be attained without organizations employing an efficient process approach.

5.3. Conclusion

5.3.1. Effects of supply chain collaboration on supply chain performance

This research's fundamental goal was to see whether there was a connection between supply chain management strategies and supply chain success in Kenya's food and beverage industry. The researcher used correlation and regression to assess the association between supply chain cooperation and supply chain efficiency and found a solid and meaningful correlation between the data analysis variables.

The results are exceptionally consistent with those of previous research by Jacob et al. (2011) and Jie et al. (2007), which considered teamwork a significant determinant of supply chain efficiency. On the other hand, the findings contradict those of Wafula (2016), who investigated the effect of supply chain collaboration on supply chain efficiency in the electricity production sector and found no substantial connection between supply chain collaboration and performance.

5.3.2. Effects of supply chain agility on supply chain performance

To determine the impact of supply chain agility on supply chain performance, the researcher used regression and correlation to analyze the data collected on supply chain agility and its

impact on supply chain performance in various food and beverage organizations in Kenya and discovered that there was a positive and significant correlation between supply chain agility and supply chain performance.

The results are especially consistent with those of previous research by Jacob et al. (2011) and Jie et al. (2007), which considered supply chain resilience a significant determinant of supply chain efficiency. On the other hand, the findings contradict the findings of Wafula (2016), who investigated the effect of supply chain agility on supply chain efficiency in the electricity production sector and discovered no significant association between supply chain agility and performance.

5.3.3. The effect of supply chain integration on supply chain performance

The researcher used regression and correlation to examine the relationship between supply chain integration and supply chain success in Kenya's food and beverage manufacturing industry. The researcher discovered a connection between supply chain integration and supply chain efficiency, both positive and essential. The findings backed up those of a study by Wafula (2016), which considered supply chain integration to be a positive and essential factor in evaluating an organization's supply chain success.

5.4. Recommendations

According to the report, the most important variable used by Kenyan food and beverage manufacturing companies to achieve high supply chain efficiency standards was supply chain integration. This means that the food and beverage industry, not just in Kenya but worldwide, should make the vector a top priority for all of their businesses. To ensure adequate supply chain efficiency standards, the industry should concentrate on ensuring the convergence of all three supply chain management techniques.

The businesses should;

- Ensure there are clear guidelines to handle customers' concerns and complaints.
- Develop sufficiently interactive websites to encourage information sharing and to address concerns fast enough.

- Ensure they are sensitive enough and that their changes are more responsive to the business environment forces.
- Strive to share their technology with the supply chain participants to the smooth flow of goods and information.

5.5 Study limitations

Because of the insecurity COVID 19 has instilled in our culture, the researcher found it difficult to obtain appointments in some of Nairobi's food and beverage companies and resort to self-administering questionnaires. Any of the primary respondents for this study declined to fill out and return the questionnaires sent to them. Another drawback was that certain people withheld critical details that they believed were too confidential to share due to the high level of competition in the food and beverage market.

5.6 Recommendations for further studies

The study suggests that more research be conducted in this field because supply chain efficiency is a significant problem not just in the food and beverage industry but also in all business sectors worldwide. After all, it affects the overall performance of the company. Other researchers conducting prospective studies in this research field would be very beneficial since this analysis was only cross-sectional. Finally, other studies should describe the other factors that affect supply chain efficiency but are not addressed in this report and the extent to which their influence is felt.

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ATTACHMENT

Appendix: Questionnaire

Food and beverage processing firms in Kenya

Company name: Indiana Food and Beverage Company Ltd.

Location: Wilson Airport - Nairobi

Date: 3rd March 2021

Section A: Background Information

Kindly, fill all the questions by ticking in the boxes provided.

1. Respondent's gender

   Male **[X]**

   Female [ ]

2. Respondent's age

   Below 30 years [ ]

   31-40 Ears **[X]**

   41-50 years [ ]

   Above 50 years [ ]

3. Respondent's marital status

   Married **[X]**

   Single [ ]

4. Respondent's position (Rank) in their respective firms

   Top management [ ]

   Middle management **[X]**

   Associate [ ]

5. Respondent's education level

   Certificate/Diploma [ ]

   Undergraduate degree **[X]**

   Post-graduate degree [ ]

6. Respondent's years of experience in the food and beverage industry

   Below 5 years [ ]

   6-10 years **[X]**

   Above 10 years [ ]

Section B: Supply chain management strategies and their effects on supply chain performance (Tick inside the table)

Supply chain collaboration

7. To what extent do you think the following statements on supply chain collaboration apply to your organization using a Likert scale of 1-5 where 1 is strongly disagree and 5 strongly agree.

	Strongly agree	**Agree**	**Somewhat agree**	**Disagree**	**Strongly disagree**
My organization has included channels that are specifically geared towards ensuring the all the supply chain participants are dependent to each other		X			
My company ensures that there is active information exchange with suppliers	X				
My company's relationship			X		

with its suppliers is long-term					
My organizations ensures it keeps safely keeps and updates a database of all it clients		X			
My firm has a an interactive website where suppliers and customers give feedback			X		
My organization ensures prompt management of customers' complaints	X				
My company strives to build trust among its customers		X			

Supply chain agility

8. To what extent do you think the following statements on supply chain agility apply to your organization using a Likert scale of 1-5 where 1 is strongly disagree and 5 strongly agree.

	Strongly agree	**Agree**	**Somewhat agree**	**Disagree**	**Strongly disagree**
My company's response to customers' demand for customized products is extremely quick	X				
Most of the responsive changes in the organization are made in regards to the			X		

market place					
My organization invests in product design and development				X	
My organization is flexible enough to adapt to any changes in the market environment		X			

Supply chain integration

9. To what extent do you think the following statements on supply chain integration apply to your organization using a Likert scale of 1-5 where 1 is strongly disagree and 5 strongly agree.

	Strongly agree	**Agree**	**Somewhat agree**	**Disagree**	**Strongly disagree**
My organization has a real time connectivity IT system that enhances information sharing		X			
My organization shares technology with it supply chain participants	X				
My organization strives to ensure sufficient trust within the supply chain	X				
My organizations delivery services are excellent				X	

Supply chain performance

10. Is your organization's means of supply chain performance analysis formal? (Tick in the circles provided)

    Not formal [ ]

    Formal but limited **[X]**

    Some formal [ ]

    Formal mainly [ ]

    Extensively formal [ ]

11. Which tool does your organization use in evaluation of its supply chain performance? (Tick in the circles provided)

    Benchmarking [ ]
    Customer satisfaction [ ]
    KPI **[X]**
    Process control [ ]
    Customer service **[X]**
    Strategic performance [ ]
    SCM quality control system **[X]**
    Continuous improvement [ ]
    SCM quality programs **[X]**

12. To what extent do you think the following statements on supply chain performance apply to your organization using a Likert scale of 1-5 where 1 is strongly disagree and 5 strongly agree.

	Strongly agree	**Agree**	**Somewhat agree**	**Disagree**	**Strongly disagree**
My organization sufficiently manages long term relationships with its suppliers		X			

There is sufficient trust within my organization's supply chain		X			
My organizations is trusted by a majority of its customers		X			
My organizations delivery speed on customers' orders is quick enough	X				
My organization has achieved mutually profitable relationships with its customers.			X		

You have reached the end of this survey.

Thank you!

Appendix II: List of Food and Beverage Firms in Kenya

1. 28 Black Kenya
2. 3D networks International
3. 4choicesltd
4. Afro Teas Ltd
5. Agri-marine & Organics Co. Ltd
6. Agri-Marine Ltd
7. Alhakim Springs
8. Alloise Ltd
9. Aloelade Enteprise
10. Aquamrine Accessories
11. ArcMax General Suppliers
12. Aria & May Trading
13. Automation Systems Controls Limited
14. Baruch Traders
15. Baskin Robbins
16. Bidco Africa
17. Big Star Branding
18. Bondo Young Enterpreuneurs
19. Botanic Treasure
20. Britannia ltd
21. Brookside Dairy
22. Brown Forman
23. Cadbury
24. Changzai Machinery Manufacturing Co.,Ltd
25. Coca-Cola
26. Daisa Agencies
27. Danone
28. David Gitari Ndumia
29. Davonet Ltd
30. Dawn Horizon Chemicals Limited

31. Diageo
32. Diatom Products Limited
33. East Africa Breweries
34. East Africa Marketing Solutions
35. East African Gum Trading (EAGT)
36. Edge Food and Beverage Ltd
37. Emitex Royal Agency
38. Emminent Tea
39. energy foods ltd
40. Envire Investments Kenya Ltd
41. Equity Maritime Holdings Ltd
42. Eurofish Trading Holland BV
43. Eurofish Trading Holland BV
44. Export Institute
45. Export Institute
46. Faisal&Fahadcompanyltd
47. Falah Marine
48. Fine Blendz
49. Fish Express Kenya
50. Fish Express Kenya
51. GED Creatives
52. Gmuturi Trading Company
53. Green Seasson Enterprise
54. Green Seasson Enterprise
55. Heineken
56. HEPAN AGENCY
57. High Level International Co. Ltd
58. Homefresh Horticulture Export Ltd
59. Interscope Food Supplies
60. James Finlay
61. Kaizen Export Limited

62. Kenya Breweries
63. Kenya Nut Company
64. Kenya Seed Company
65. Kerumond Rabbit Kingdom
66. Ketepa
67. kilimanjaro oasis limited
68. kilimanjaro oasis limited
69. Kinenengena Tea Trading company
70. Kulakula
71. Lasale fresh produce
72. lasale fresh produce
73. List Import-Export
74. List Import-Export
75. List Import-Exports
76. Lorient Prudent Traders Ltd
77. Lucent Exim (K) Ltd
78. MagMatt Enterprises
79. Mama Duka Venture
80. Mars
81. Maunguja enterprises
82. Mcfc Unio
83. Miasha flour Mills
84. MK & Sons Limited
85. Mombasa Best Tea
86. Mondelez International
87. Morethan Diatributor
88. Morethan Diatributor
89. MSC EA Ltd.
90. Mudrust Commodities Limited
91. Mumias Sugar

92. Mzinga Honey Product
93. Mzinga Honey Product
94. Mzinga Honey Products
95. Nestle
96. NEW WESTLAND STORES LTD
97. Njorah Food Product
98. Njoro Canning Factory
99. NJORO CANNING FACTORY LTD
100. Noble Cause Enterprise
101. Nuts of Africa
102. Nuts of Africa Ltd
103. Pernod Ricard
104. Philgate Kenya Limited
105. Phillworth Projects
106. Pemier Meat and Skin Ltd
107. Premier Food Industry
108. Pwani Oil Products Ltd
109. Quatriset Investment
110. Quatribel Food Services
111. Raft Meat House
112. Raft mutton House
113. Razco Ltd
114. Safarivllage Limited
115. Shalom Transport and Courier
116. Shalom Transport and Couriers
117. Sirocco Commercial
118. Sirocco Commercial Services Ltd
119. Soft n Fuzzy Limited [Kenya]
120. Starterup company
121. Starterup company
122. Stawi Foods and Fruits Limited

123. Step Swift
124. Swft Kenya
125. Sun Set Gross Agro
126. Sun Set Gross Agro
127. SWEET 'N' DRIED ENTERPRISES
128. TALLER (K) LTD
129. The Coca Cola
130. Inn Kenya
131. The Garnets Enterprises Limited
132. The Kenya Coffee Directory
133. Toboswet Ltd
134. Trade Inn Ltd
135. Weetabix
136. Whire General Agencies
137. Wild Wind
138. Yummy Dairy Product
139. Zenith international