SUPPLY CHAIN MANAGEMENT PRACTICES, PROCESS FORMALIZATION AND ORGANIZATIONAL PERFORMANCE OF CARGO HANDLING FACILITIES IN KENYA
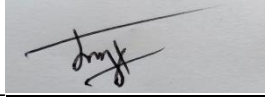
BY

JOSEPH, REX RIGHA

A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI

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DECLARATION

This research project report is my original work and has not been presented or examined for an award of a degree in this or any other university.

Signature: _____   Date: 09/12/2021

Joseph Rex Righa

D61/68100/2013

This research project report has been submitted with my approval as the university supervisor.

Signature: _____   Date: 09/12/2021

Dr. Job Lewela Mwanyota

Department of Management Science and Project Planning

Faculty of Business and Management Sciences

University of Nairobi

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DEDICATION

The work is dedicated to my beloved family for the crucial moral support and prayers while working on the paper. To the Almighty God, I give all the thanks for the blessings showered upon me and the courage to accomplish the study.

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ABBREVIATIONS AND ACRONYMS

CFS   Container Freight Stations

CSCMP   Council of Supply Chain Management Professionals

GBH   Grain Bulk Handlers

ICD   Internal Container Depots

IT   Information Technology

KPA   Kenya Ports Authority

KRA   Kenya Revenue Authority

OP   Organizational Performance

RBV   Resource Based View

SC   Supply Chain

SCEA   Shippers Council of Eastern Africa

SCM   Supply Chain Management

SCMP   Supply Chain Management Practices

SME   Small and Medium-sized Enterprise

SWT   Strength of Weak Ties

TEU   Twenty-Foot Equivalent Unit

ABSTRACT

The study sought to find out the effect of adopting Supply Chain Management (SCM) practices on the performance of cargo handling/storage facilities. The specific objectives of the study included: to establish SCM practices adopted by cargo handling/storage facilities in Kenya; to determine the correlation between SCM practices and organizational performance of cargo handling/storage facilities in Kenya; and to establish the mediating effects of process formalization on the relationship between SCM practices and organizational performance of cargo handling/storage facilities in Kenya. The resource-based view, the stakeholder theory and the strength of weak ties theory guided the study. The study used the descriptive cross-sectional survey. The study employed a census which consisted of 48 firms. Data was collected using questionnaires and analyzed using SPSS. The study had a response rate of 62.5% (30 firms). The study concluded that SCM practices employed by the facilities are inventory management, supplier chain network design and strategic supplier partnership. The study further concluded that SCM practices have a statistically significant effect on the organizational performance of cargo handling/storage facilities in Kenya. The results indicated that the mediating variable has a statistically significant effect on the organizational performance of cargo handling/storage facilities in Kenya. The study recommended that industry players need to make sure that they embed process formalization in their operations. These process formulation strategies are geared towards upholding the SCM practices to improve industry performance and growth.

Key words: Supply Chain Management Practices, Process Formalization, Resource-based View

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

An organization that adopts best practices of supply chain management (SCM) has better chances of integrating business processes regarding Supply Chain (SC) to ensure that firm's performance in the long run is improved (Mentzer, Min & Zacharia, 2000). Implementation of SCM practices is essential in having positive performance (Li, Rao, Ragu-Nathan & Ragu-Nathan, 2005). In addition, process formalization is said to eliminate uncertainty, develop regulations, measures to routinize repeated procedures, businesses and also raise main concerns that will lead to improved organizational performance (Ruekert, Walker Jr & Roering, 1985). The adoptions of current best SCM practices in an organization are based on available formal instructions, standard procedures and policies (Ford & Slocum, 1977). This provides value addition in terms of enhancing efficiency based on the high-quality products and also quality response (Chau, 1997). Little (1999) states that the goal of SCM is adding contribution of value to the client whilst minimizing operational costs of the SC. Mansaray (2018) argued that, the digital environment and information technology has globally impacted SCM practices. Most organizations have concentrated on financial measures in order to identify their performance trends. In addition to financial measures organizations need also to incorporate operational/non-financial measures to have a good understanding of their performance (Kaplan & Norton, 2005).

This research was based upon the following theories namely: Resource Based View (RBV), stakeholder theory and Strength of Weak Ties (SWT) theory. RBV concentrates on the resources of a firm which are crucial triggers of operational performance (Barney, 1986). The main focus is on the concept of difficult-to-imitate features of a business in terms of strong performance (Hamel & Prahalad, 1996). Stakeholder theory promotes efficient, practical, ethical and effective ways of managing organizations that are found within turbulent environments (Freeman, 2010). Firms that are able to manage their stakeholders in an uncertain environment possesses better information upon which they can make a decision and with this attractive feature among its other market players grants them strategic advantage over its competitors who do not manage for stakeholders (Freeman, Harrison & Wicks, 2007). According to Granovetter, (1973) SWT theory network function is flow or dissemination of information. In the field of management, SWT

theory has been used to understand organizational performance (Sparrowe, Liden, Wayne & Kraimer, 2001).

With the growth of cargo being handled at the port of Mombasa, there is need to building more capacity to cope with the increase in cargo being handled by these cargo handling facilities and this will be realized solely by adopting best SCM practices (KPA, 2015). In addition to that cargo handling facilities need also adopt global practices with the aim of strategically meeting the global trends such as infrastructural development and technological changes like digitalization. This study would highlight on the best SCM practices that would improve firm revenue that most cargo handling facilities have failed to realize while also ensuring they provide the needed levels of competition against its competitors. According to Kenya Revenue Authority KRA (2020) there are several cargo handling facilities that offer various services to its clientele. These include: container terminals at Kenya Ports Authority (KPA), Grain Bulk Handlers (GBH), Container Freight Stations (CFS), bonded facilities, private warehouses, cargo freighter and Internal Container Depots (ICD).

1.1.1 Supply Chain Management Practices
SCM practices has no definite definition however we can simply refer it to as an amalgamation of an organization's business units in organizing and coordinating information and product flow towards achieving customers' requirements through a successful and wholesome supply chain (Mansaray, 2018). In supply chain management, a best practice is a well-defined approach that organizations adopt to make better the supply chain course.

According to Khan and Siddiqui (2018) SCM practices used include: information sharing quality, partnership with strategic suppliers and levels of sharing information. Petrovic-Lazarevic, Sohal & Baihaqi (2007) based their study on five SCM practices which are: information sharing, customer and supplier relationship, IT Training and internal operation. Khaseke (2015) highlighted the following main SCM practices which include: strategic sourcing and supply chain network design. Mansaray (2018) acknowledged SCM practices when it comes to the SMEs is key in information sharing, strategic supplier partnership, customer management and inventory management. Daugherty, Stank & Rogers, (1992) also considered the following SCM practices in its three measures that include: information technology, inventory management, facilities design and logistics consulting. Throughout SCM, several best practices

are widely followed. For the purpose of this study SCM practices that will be used are: strategic supplier partnership, inventory management and design of network of supply chain. The main reason for selecting these SCM practices are because they have been widely applied in previous studies and have a great influence on organizational performance.

The best way to manage supply chain is to develop a tactical joint venture with its supplier and this ultimately leads to better dissemination of information, reduce uncertainty and improve organizational performance (Khan & Siddiqui, 2018). Perona & Miragliotta (2004) stated that with varied supply base due to rise in the number of supplier, communication among supplier and key stakeholders in the supply chain becomes difficult. Complexity in communication which normally results to operational troubles are present at the higher level of a supply chain, where there are possibilities that interruptions can occur because of difficulties in acquiring the components. Supplier Partnership is associated with collaboration among two or more firms that help each other in major activities like research, product manufacturing, marketing and delivery. It is stated that supplier partnership and integration of information have implications on supply chain performance (Khan, Liang, & Shahzad, 2015).

Management of inventory has a critical role which affects the condition of chain of supply and its implication on the fiscal condition of the balance sheet. It is each firm's desire to keep optimal levels of inventory since inventory itself is dynamic in nature. Inventory management entails assessment of outer and inner aspects constantly as well as carefully while preparation and evaluation would be idle for control of these factors. Many a firms possess a department set aside (job function) known as inventory planners who constantly observe, manage and assess records and interface among the various departments such as production, procurement and finance (Samanta, 2015). Management of inventory simply means paraphernalia which is put to use to enable systematization, stocking and stock replacement. The key objective is to maintain the inventories at an optimum level and without deficit and surplus stocks. Thus, two contentious but mutually reliant duties ought to be solved; first is to have sufficient levels of inventory to meet the needs and satisfaction of the customers. In simple terms assure high level of customer service which is considered as availability (fill rate). Secondly, to reduce costs that carry, mainly capital attached to inventories for profit maximization (Priniotakis & Argyropoulos, 2018).

Determining the ideal site and magnitude of facility and the flow through the facility, it is appropriate to utilize a good SC designed network (Khaseke, 2015). Supply chain network design is determined by the distributors, factories, warehouses as well as flow of produce from the source of every product to the consumer. The quantity and site or localities of these properties are also of great importance. According to Watson et al. (2013) 80% of the supply chain expenses are tied to the locality of the property and the clarifications of product's maximum flow between them. This stresses the tactical arrangement by establishing the best location for the facility and product flows for organizations.

1.1.2 Process Formalization

According to Ford and Slocum (1977) process formalization is the degree to which working interactions as well as decisions are governed by formal guidelines, standardized policies and procedures. Process formalization is said to boost performance by removing ambiguity, developing regulations and measures to routinize recurring procedures and transactions, and spell out the main concerns (Ruekert et al., 1985). The goal of formalizing process is to show what should be done and not how it should be done. It is crucial since it does not create a limit in terms of responsibility (Shrader, Taylor & Dalton, 1984).

Routinization of activities leads to superior performance when the nature of particular job and the job surroundings are open to such formalization. Simple recurring duties or transactions are simpler to homogenize through regulatory frameworks of a firm's operations, standardized instructions or manuals put in place, sensitization on new policies and procedures to staff, adherence to control measures by staff and continuous review of firm's current policies and procedures to match with emerging trends than non-recurring duties or those of longer period (Ruekert et al., 1985). In logistics, process formalization improved operating flexibility. Process formalization also helps in the achievement of operating efficiency (Droge, Germain & Rogers, 1992). Process formalization enables the logistics manager to evade from constantly working in crunch mode. With elaborate rules and processes, the logistics firm is capable of reacting to special requirements in a highly robust way. The presence of a formalized logistics structure allows managers to clarify priorities and focus resources on the pursuit of activities that expand the overall service capabilities of the firm, enhancing operational performance by increasing the value provided to customers (Daugherty et al., 1992).

Burns and Stalker (1961) stated that there is a better performance when it comes to firms that have a higher centralization and formalization when it comes to environmental uncertainty. Germain and Spears (1999) also argued that, process formalization can be looked at as a process of ensuring that there is the coding and transmission of knowledge to enhance organizational performance in form of quality management within the firm.

1.1.3 Organizational Performance

Organizational performance as a critical function to hold up business practices has been considered strongly by business executives. Experimentally, studies have put to test the application of the concept of firm's performance for various matters connected to a firm's stability, argue Venkatraman and Ramanujam, 1986. Similarly, performance is an accomplishment that ought to be broadcasted to all sections of the organization. According to Hofer (1983) performance of most organizations is measured using financial indicators. Generally, financial indicators used are revenue, profitability which is normally mirrored by theROE, ROI, return on sale and EPS.

A better understanding of measurement of performance requires the incorporation operational performance indicators which are non-financial on top of the establishing fiscal performance (Kaplan & Norton, 2005). It is important because the fiscal measures do not give a true picture of the state of an organization. Thus, measures e.g., effectiveness of marketing, product quality, introduction of new product, market share, manufacturing value added, as well as other measures of the competence of the technical know-how are included as factors of measures of performance of the firm (Ibrahim & Primiana, 2015). Amalgamation between the performance of non-fiscal and fiscal information can assist firms to identify the decisions to be taken to cope with future uncertainties (Kaplan & Norton, 2005).

Shalakha, (2015) stated the balanced scorecard as the most widespread instrument used to measure performance of the firm. Ibrahim et al., (2015) have indicated that the ideal measure of performance that was considered was the balance scorecard. Mwale, (2014) argued that performance is financial and non-financial. Balanced Scorecard rider is of the concept that the financials of a company alone is not anymore, the core techniques of managing performance. These fiscal models are important since they provide past information, however they are slightly helpful in handling future affairs of an organization. This is because financial models display

information acquired through history and illustrate the firm's previous revenues which can barely explain the future's situation (Kaplan & Norton, 2005). In addition, the performance measure of the balanced scorecard approach is applied by taking to consideration the company's four viewpoints named as follows: internal process, customer, financial and learning and growth viewpoints, argue (Kaplan & Norton, 1996). This study will be based on the balance scorecard as the measure of organizational performance, because it is considered vital and has been widely used in several studies.

1.1.4 Cargo Handling Facilities in Kenya

There are several cargo handling facilities in Kenya and this is linked to the fact that Mombasa hosts the one of the major harbors in East Africa. However, in this study we are going to concentrate on container terminals at KPA, GBH, CFS, customs bonded warehouses and ICD. Mombasa port managed 22 million metric tonnes in 2014, according to KPA (2015), and 24.2 million tons in 2015. It reached 26 million tons in 2016. The port was expected to manage 27 million tons in 2017 and 60 million tons by 2030. In addition to serving northern Tanzania, South Sudan, Uganda, Rwanda, the DRC and Burundi, Mombasa port imports Sh1.3 trillion worth of goods annually. "Volumes have been growing at a rate of more than 10 per cent or a hundred thousand, Twenty-Foot Equivalent Units (TEU) since 2014 when the 1M TEU mark was attained, meaning that in about three years when the railway is projected to move 40 per cent of cargo, there will be an extra 300,000 TEU," as stated in the KPA report.

KPA operates two container ports, Kipevu and Mombasa, whose operations include vessel discharge and loading, container stacking and un-stacking, and delivery or reception of export and imports containers. GBH is a private company that has been handling bulk grain from the port of Mombasa and is enjoying monopoly as the sole bulk grain operating facility. CFS are put in place to facilitate handling of containerized, loose cargo and their storage between the port of Mombasa and the importers/exporters. Its main operations are: storing of loaded as well as unfilled containers, loading of oversees-bound cargo, unloading imported containers and verification of shipment by Kenya Revenue Authority's customs service department (Mbebe, 2012). According to the KRA (2020), a customs bonded warehouse is a warehouse is a facility licensed by KRA for the storage of cargo imported to the region awaiting payment of taxes. According to KPA (2020), ICD are linked to the port of Mombasa by a rail-tainer service.

Imports are delivered directly from Mombasa to the depots, while exports are consolidated at the ICD and railed to the Port for shipping.

1.2 Research Problem

SCM practices have been argued to help organizations adopt modern approaches, facilitate change management practices and improve knowledge and skills required to implement these approaches so as to improve organizational performance, this is according to CSCMP. Although this has been the argument organizations have had challenges in achieving these objectives (Daugherty et al., 1992). The true extent to which SCM practices improve organizational performance has had varied results. Process formalization has been used among SCM practitioners to improve organizational performance. Yet there are formal instructions, standard policies and procedures available to guide an organization in the adoption of the current best SCM practices. With these in place the extent to which process formalization among SCM practitioners have improved organizational performance is yet to be investigated.

With increase in volumes being handled by port of Mombasa, most of the cargo handling facilities have been tasked with the challenge to the cargo capacity at the port (Mbebe, 2012). Due to this they are challenged with congestion and delayed delivery of cargo to its owners. These delays in imports and exports usually occurs at major and busy entry or exit points like the port Mombasa which normally affect the running's of their operations. According to Mwamure (2000) capacity at GBH terminal is the greatest challenge they face since there is uncertainty of satisfying both the capacity requirements of Kenya and the entire region of East and Central Africa. Whereas the extra cargo would be managed by CFSs, according to the KPA report (2015), it is difficult to establish capability for all cargo there at port at every given time. When CFSs were established in 2007 to ease congestion there at Mombasa port, they were seen as a solution to the port's threatened regional competitiveness. The port, which was already overburdened with goods, was also jeopardized by the persistent vessel delay premium imposed by shipping lines. These cargo handling facilities also need to either set up new rules, regulations and strategies or put to use the existing one that have not been put to play in order for them to manage the new emerging issues of more cargo capacity, congestion and delayed delivery. According to the Shippers Council of Eastern Africa (SCEA), lengthy economic supply chain,

mismanagement, inefficient use of equipment, isolated processes and procedures has led to reduced gains both at the ICD and through the entire logistics chain for cargo owners.

Locally, various studies have captured different components of SCM, Mbebe (2012) researched on the task of CFSs in unclogging Mombasa port in Kenya. The study discovered that despite the great extent the CFSs have assisted, they experienced various challenges such as KPA penalties, feeble regulatory structure, operating costs and tariff structures interpretations as well as delays in the transfers. Mansaray (2018) studied SCM practices and organizational performance among of Nairobi based SMEs. Mwale (2014) analyzed the link between SCM practices and firm's revenue of huge manufacturing companies in Kenya's capital. However, this study concentrated on SCM practices, process formalization and organizational performance of cargo handling/storage facilities in Kenya, areas which have not been studied in the above stated studies. The work focused on filling the research gap by answering these questions: What is the effect of process formalization upon the relation between SCM practices and firm's organizational performance of cargo handling/storage facilities in Kenya?

1.3 Research Objectives

The study sought to find out the effect of adopting SCM practices on the performance of cargo handling/storage facilities. Specific objectives of this study included:

(i) To establish SCM practices adopted by cargo handling/storage facilities in Kenya.
(ii) To determine the correlation between SCM practices and organizational performance of cargo handling/storage facilities in Kenya.
(iii)To establish the mediating effects of process formalization on the relationship between SCM practices and organizational performance of cargo handling/storage facilities in Kenya.

1.4 Value of the study

The work will provide insight to operations managers on available supply chain management practices that cargo handling facilities can undertake to achieve the required levels of performance. This will also enable these facilities to curb down on the barriers to adoption of these best practices. Operations managers will also be able to formalize their SCM processes in

order to attain higher levels of organizational performance. Better decisions will be made by operations managers due to adopts of these best SCM practices.

Scholar in the management science field will benefit from the new knowledge on SCM practices and firm performance. There will be also knowledge on effects of process formalization on the relationship between performance of a firm and SCM. In addition, this work will provide a reference point for carrying out future research by other future scholars.

With the efficient movement of cargo through these facilities, the government will be able to collect the needed revenue to finance its operations and in the long run serve the people of Kenya. With improved firm performance, the government is tasked to put up better statutory and regulatory framework that will facilitate trade within the East African region. Better operations of these facilities will lead to better tariffs levied on traders thus better service delivery. Ultimately, the government can be able to set policies that will entice cargo handling facilities in Kenya to adopt these best SCM practices so as to increase their profitability.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Here you will find the general idea of the written materials concerning the management of purchasing and supplies, firm's financial success as well as other and associated matters. This section captures the theories that anchor this study, how the variables are related as per previous studies done by various scholars as illustrated throughout this document and finally build up on the conceptual framework that will be used in this study.

2.2 Theoretical Literature Review

Here, the related assumptions to the work are discussed. There are three presumptions that this particular study is dependent upon- the stakeholder, strength of weak ties and the resource-based hypotheses.

2.2.1 Resource Based View

This theory assumes that company's success is due to organization-specific assets and potential, writes Barney (1991); Wernerfelt (1984). The former asserts that if all the organizations had equal assets, performance difference would be zero amongst them. This would be due to absence of business competence. The basic feasible effects of this competitive position chiefly rely on the price of assets and potential put in for carrying out the method followed. RBV states that, resources need the following four traits categorized as rare, valuable, non-substitutable (VRIN) and in-imitable. Researches done have proven that firms have these resource qualities and makes use of their abilities can undoubtedly reach an unmatched success and a way better financial height (Mweru & Maina, 2015).

Firms perform better if their resources are valuable and this enables them eliminate any market threats or assists them in exploiting new market opportunities. For this reason, companies ought to get resources increase desirability and worth. Barney (1991) would also allow a firm to visualize or execute schemes which develop its competence and efficacy. Assets are ideally scarce make each one unique or rare, thus current as well as prospective organization rivals find it hard to trace these resources and due to the unique nature of resources firms need to make strategic decision in order for them to be relevant. Assets that are owned by a number of businesses can never give competitive lead, since designing and carrying out a special business

scheme compared to competitors is impossible. Non-exchangeability of assets means assets can't be replaced by other choices of resources. Rivals can't realize the exact same success by replacing assets with other alternative ones.

RBV assists company's management to comprehend why putting into operation the best SCM practices can be seen as a business' most valued possession while, appreciating the way this possession can be of use in increasing success. This theory can be widely used by firms to attain superior performance as long as unique SCM practices are available and the capabilities used to implement these unique practices are pursued.

2.2.2 Stakeholder Theory
Here, the center of attention is on how executives manage their stakeholders. It is a sensible assumption since every organization has to deal with stakeholders, irrespective of whether or not they are excellent at managing. This hypothesis is competent for the reason that the well treated stakeholders normally give back in return positively and behave in a manner to favor the firm, like in giving out important information, purchasing additional goods (services), offering tax breaks (including any other inducements), offering improved monetary provisions, purchasing additional supplies or merely just maintaining loyalty to the business, including throughout hard seasons as in employees. This is efficient since it attaches the drive of stakeholders to the firm's accomplishment. In a multifaceted as well as unstable surroundings, it is very important since organizations which take good care of stake holders possess enhanced information which help them make sound decisions and, since they are eye-catching to other industry players, they exhibit a degree of tactical elasticity which is unavailable to market players that do not manage well the stakeholders as asserted by Freeman, (2010) and Freeman et al. (2007).

This theory is relevant in SCM because if an employee implements the best SCM practices, services shall be delivered to the customer speedily since this would encourage the customer to subscribe or buy more services from the firm. With this it would mean the firm will have a competitive edge and attain a higher level of business performance.

2.2.3 Strength of Weak Ties Theory
Networks are seen as systems of pipes through which information flows argued Granovetter (1973). The theory has gained popularity, since it enhances the likely effects of social network ties on creativity. According to Brass (1995), networks concentrated with "weak" ties,

relationships socially that are based on minimal interactions and also lack of enough closeness are key as they allow for limited access to information. Hence, they can spur the emergence of ideas that are creative in nature.

The assumption that is found when it comes to the strength-of-weak-ties theory is that there is exposure that is created when it comes to weak ties. Such exposures are different from each other as they are different for each of the firms. Different lines of thoughts are key when it comes to the generation of ideas that are creative such as those that are not in line with the cognitive framework of the firm that is involved in the process (Mumford & Gustafson, 1988). Additionally, the importance of the optimal size networks and weak strength when it comes to the stimulation of creativity is based on access to exposure when it comes to the sources of information.

2.3 Empirical Literature Review

This section reviews research done both globally and locally that have discussed and shown interest in SCM, process formalization as well as company success.

2.3.1 Supply Chain Management Practices

Scholars by the names Petrovic-Lazarevic, Sohal & Baihaqi (2007) in their study of SCM practices and their success in manufacturing industries in Australia revealed that SCM practices greatly enhance firm revenue. The outcome particularly pin pointed IT as well as information sharing to considerably and positively affect firm performance. The in-house operational practices lead to additional performance measures than seller and client relationship practice. The limitation of the study is it concentrated on manufacturing firms.

Khaseke (2015) examined the relationship between global SCM practices as well as performance of Toyota Kenya limited. This research concluded that SCM practices were strongly related to performance and profitability where adoption of superior practices led to increased profitability. Major limitation was that the study concentrated on Toyota Kenya limited and cannot be representative of the motor vehicle industry hence the findings cannot relate to other firms nor can conclusions be related to the Industry practices.

Watulo (2017) studied the link between SCM practices and supermarkets' competitive advantage in Nairobi. The research indicated that firms that have been operating for a long period to the level of adopting relevant SCM practices greatly improved their competitive advantage within the market. The study also concluded that partnership management, strategic supplier management, postponement, lean practices, outsourcing and sharing quality information have positively impacted supermarkets' competitive advantage within Nairobi County. The limitation of this research was that it did not cover all aspects of SCM practices of supermarkets.

Omariba (2014) in his study assessed SCM relationship with SC performance of Kenya's mobile phone companies. The discussion of the study indicates that the mobile companies in Kenya have been able to experience reverse flow of material; managed environmental packaging, controlled environmental risks, distribution and the reuse of materials. The study also showed that the companies have adopted the use of eco-label product purchase, environmental collaboration with suppliers, supplier assessment and assessing supplier assessment and certification.

2.3.2 Supply Chain Management Practices and Organizational Performance

Shalakha (2015) studied how innovative SCM practices affect success of oil promotion firms in the country. The study concluded that integration, mass customization, JIT, e-procurement and outsourcing were massively implemented in various Kenyan oil marketing companies. Practices of reverse logistics were not widely applied by the companies. Additionally, innovative SCM increased revenues through reducing the cost. The study finally concluded that the major issues affecting execution of innovative SCM practices by oil marketing companies included improper training, lack of investing in research and improvement, non-compliance with current technology as well as deficiency of dedication by executives.

Mansaray (2018) analyzed the link between SCM practices and organizational performance of small and medium-sized enterprises in the capital city of the country. In order to determine the link between SCM practices and operational success, correlation and regression analysis were applied. The study revealed a strong positive and statistically important connection linking SCMP and OP amongst SMEs influencing 69.9% of the total variance in SCMP of SMEs in Nairobi County. The context of study was only on SMEs in Nairobi and in addition it was a challenge to obtain information from the SMEs in Nairobi.

Mwale (2014) studied the relationship between SCM practices and firm's revenue of huge manufacturing companies in Kenya's capital. The research revealed that most of the prominent manufacturing companies in Kenya had implement different practices that are used in SCM. The practices have aided the huge manufacturing firms to increase the success of the companies. This was complimented as well by the outcome of the regression analysis undertaken, which highlighted a sturdy connection between SCM practices and organization's success. Application of this research is biased on massive manufacturing companies in the country.

2.3.3 Supply Chain Management Practices, Process Formalization and Organizational Performance

Burns and Stalker (1961) have argued that high formalization and centralization based in the mechanistic structures tend to create a positive performance when it comes to uncertain environments. Palmer and Dunford (2002) on the other hand have indicated that formalization and new organizational process have a positive relationship (Meirovich, BrenderIlan & Meirovich, 2007). Germain and Spears (1999) have also noted formalization in some of the cases is referred to as the process of making sure that there is the coding and the transmission of knowledge in order to enhance the performance of the firm based on quality management.

The objective of the SC practices is to make sure that there is a smooth flow of information and materials (Khan & Siddiqui, 2018). SC has become essential in terms of formalization and improvement of performance of firms which has also been challenging to many firms (Germain & Spears, 1999). Therefore, SCMPs and process formalization have become vital phenomena that have created attention among executives and academic researchers.

Daugherty et al. (1992) in their study of the impact of formalization on warehousing firms revealed that formalized organization was considered to improve their performance. Internal formalization allows the firm to improve process control. This means the firm is better able to handle nonstandard situations. External formalization allows the customer to feel more at ease with the concept of outsourcing warehousing services. Customers generally are more comfortable when the actions of their suppliers are both predictable and clearly communicated. However, the research reveals that high levels of formalization might hinder innovation.

Meirovich et al. (2007) in their study noted that the dimensions that are there in terms of structure are key when it comes to the total quality of the structures that are involved in the process. Furthermore, the study noted that hospitals should ensure that there is investment in the total quality management and at the same time ensuring that formalization and decentralization are balanced. Limitations that the study noted was the use of cross-sectional method that hindered definitive conclusions to be done and also the study used data from one country and thus there can be no generalization of the results.

2.4 Summary of Past Studies and Knowledge Gap

The overview of literature for this study has been highlighted in Table 2.1 below.

Table 2. 1 Overview of Literature

Researcher	Topic	Methodologies	Findings	Gaps
Petrovic-Lazarevic et al. (2007)	Practices of SCM and Performance of SC in Manufacturing Industries of Australia.	Questionnaires	IT and distribution (sharing) of information considerably makes an impact on much of the measures of performance. The inside operations practice makes an impact on more performance measures compared to customer and supplier relationmship	This work focused on manufacturing firms
Khaseke (2015)	Global practices of SCM and Toyota Kenya LTD Performance	Descriptive research design. Primary as well secondary records were gathered.	SCM has an impact on the Firms revenues	Not all car companies were studied
Watulo (2017)	SCM practices and Competitive Advantage of Supermarkets in Nairobi County.	Descriptive survey design.	The studied concluded that SCM practices greatly improved competitive advantage of supermarkets	This research did not cover all aspects of SCM practices of supermarkets
Omariba (2014)	Green Supply Chain Management Practices and Supply Chain Performance in Mobile phone Firms in Kenya	A descriptive type of research design was conducted.	The study revealed that Green SCM Practices increased SC performance among Kenyan mobile phone companies	The study was did not cover all aspects of green SCM practices
Shalakha (2015)	Innovative Practices of SCM and firm success of Oil	Primary data was gathered using questionnaire. This work used	Regression results showed that innovative practices of SCM increased	Major issues facing execution of innovative

	Marketing Companies in Kenya	descriptive data, regression and correlation analysis	firm performance of oil marketing companies	SCM practices by oil companies were; absence of appropriate schooling, lack of investment in research and expansion, lack of investment in new technical knowhow and non-commitment by the top management.
Mansaray (2018)	Practices of SCM and Firm Performance of SMEs in the capital city of Kenya	This work used descriptive research design	This work revealed a strong positive and statistically important connection linking SCMP and OP amongst SMEs	The context of study was only on SMEs in Nairobi
Mwale (2014)	Practices SCM and Firm fiscal Performance of Large Manufacturing organizations in Nairobi, Kenya	The design of research put to use was a cross sectional survey	The research deduces that among the big Kenyan manufacturing companies there is the adoption of various SCM practices	This work is limited to large manufacturing companies in Kenya
Daugherty et al. (1992)	Impact of Formalization on Warehousing firms	Questionnaires	Formalized organization are considered to improve their performance	The study indicated that formalized organizations were less innovative.
Meirovich et al. (2007)	Quality of hospital service: the impact of	Hypotheses were measured using correlation and regression	Higher decentralization tend to have an impact on design quality	Limitations that the study noted was the use of

	formalization and decentralization	analysis.	positively due to higher formalization	cross-sectional method that hindered decisive conclusions to be done and also the study used data from one country and thus there can be no generalizatio n of the results.

2.5 Conceptual Framework

The conceptual framework used in this study indicates that there exists a connection between SCM practices and firm's success. However, this interaction is influenced by process formalization. Figure 2.1 below shows the relationship.

Figure 2.1 Conceptual Framework

Independent Variable   **Dependent Variable**

Mediating Variable
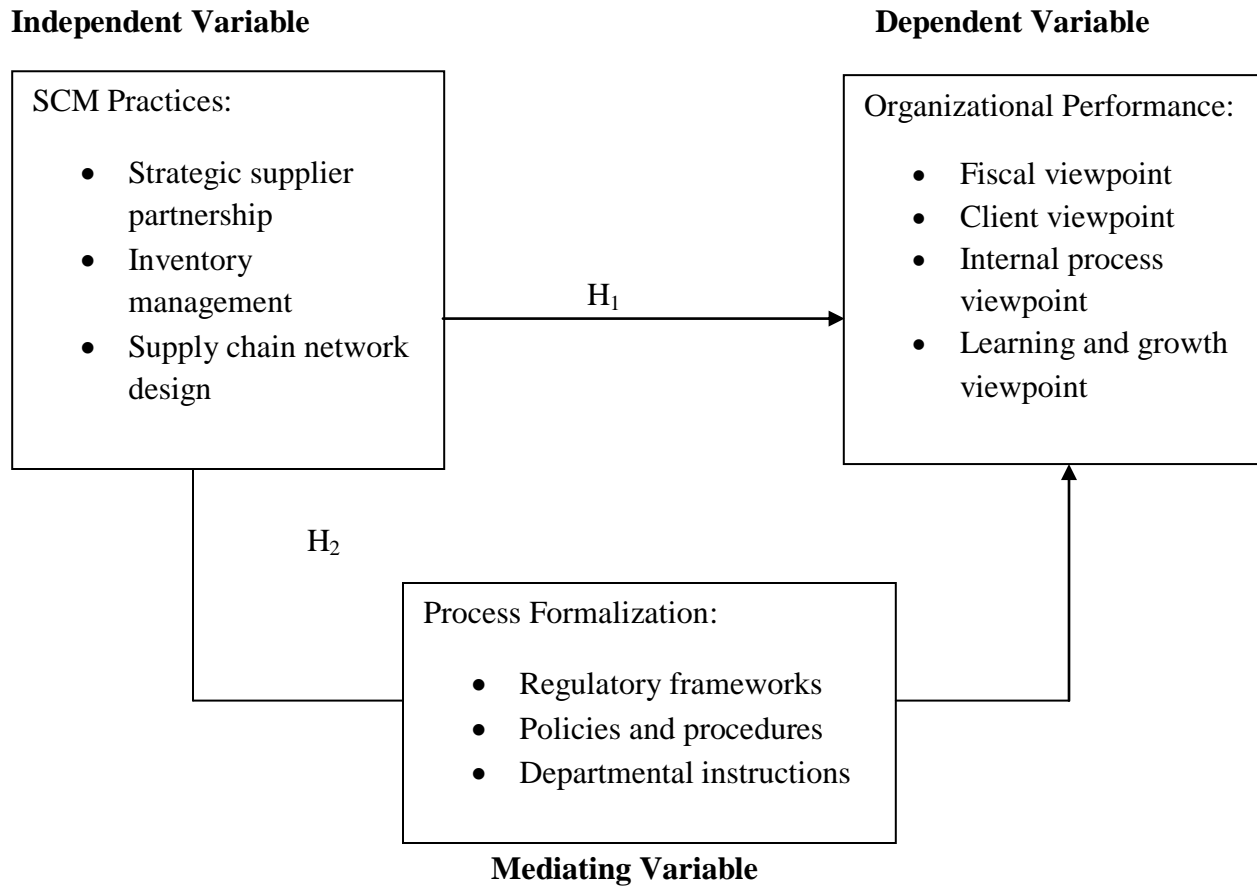
Source: Author (2020)

The study hypotheses are described as follows:

H_1 - There is no relationship between SCM practices and organizational performance of cargo handling/storage facilities in Kenya.

H_2 - There is no mediating effects of process formalization on the relationship between SCM practices and organizational performance of cargo handling/storage facilities in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Here, a description of the methodology that is intended to be used while undertaking this work is given. It is basically the research design that was used, target population, information collecting techniques as well as the statistics analytical procedures that were used.

3.2 Research Design

This is the arrangement and constitution of examination so conceived as to efficiently handle the research problem. Descriptive cross-sectional survey was applied to determine the relation between SCM practices and organizational performance. This design suits this study because it seeks to display the causal relation between study variables.

3.3 Population of the Study

This involves container terminals at KPA, GBH, CFS, customs bonded warehouses and ICD who handle cargo from the port of Mombasa. A census was conducted for this research. Study population is forty-eight (48) facilities, comprised of two (2) container terminals at KPA, one (1) container terminal at GBH, twenty (20) container freight stations, twenty-four (24) customs bonded warehouses and one (1) container terminal at ICD Embakasi as per KRA (2020) report.

3.4 Data Collection

Here, primary information from the selected cargo handling facilities was used, which was gathered via questionnaires. Four sections of the questionnaire are: Section A is the general information, Section B measured the SCM practices, Section C measured process formalization and Section D measured organizational performance. The data was collected with the help of research assistants. Operations managers at the various levels of management were the respondents.

3.4.1 Reliability and Validity Tests

Testing for reliability is critical since it states the consistency across the questionnaire (Huck, 2015). This study used the Cronbach Alpha coefficient, as the consistency measure that is internal. It is the best when Likert scales are used (Whitley, 2002, Robinson, 2010).

According to Dikko, (2016) validity tests, explain how well the data collected reveals the actual area that is being studied. In this study, the main validity types to be tested are: content validity and construct validity. Content validity was used since it is highly recommended and tests the level to which items in a questionnaire reflect the reality of the questionnaire was generalized (Straub, Boudreau & Gefen 2004). According to Taherdoost, (2016) construct validity test is an important and mandatory to carry out. Construct validity was checked using Pearson's correlation coefficient method. In this method, the obtained value should be above the critical value obtained from Pearson's correlation coefficient critical values table and the significance level should be less than .05.

3.5 Operationalization of Variables

In the study, SCM practices, process formalization and organizational performance were operationalized using multi-item indicators. Below is table 3.1 further indicating how variables were operationalized.

Table 3. 1 Operationalization of Variables

Latent Variable	Operational Definition	Constructs	Indicators	Source/ Authority	Measurement	Scale	Questionnaire Item
SCM practices	SCM practices is operationally defined as the average rating of multi-item score on the five point Likert type scaling for the pre-defined sub-constructs.	Strategic supplier partnership Inventory management Supply chain network design	Multi-item indicators as shown in questionnaire Section B	Khaseke, 2015; Mansaray, 2018; Samanta, 2015	Five point Likert-type Scale	Interval	Section B
Process Formalization	Process Formalization is operationally	Regulatory frameworks	Multi-item indicators as shown in	Ruekert et al., 1985; Daugherty et	Five point Likert-type Scale	Interval	Section C

	defined as the average rating of multi-item score on the five point Likert type scaling for the pre-defined sub-constructs.	Policies and procedures	questionnaire Section C	al., 1992			
		Departmental instructions					
Organizational Performance	Organizational Performance is operationally defined as the average rating of multi-item score on the five point Likert type scaling for the pre-defined sub-constructs.	Fiscal viewpoint	Multi-item indicators as shown in questionnaire Section D	Kaplan and Norton, 1996; Shalakha, 2015	Five point Likert-type Scale	Interval	Section D
		Client viewpoint					
		Internal process viewpoint					
		Learning and growth viewpoint					

3.6 Data Diagnostics

3.6.1 Normality Test

Multiple regression analysis is based on the notion of normality using skewness and kurtosis. Skewness indicated the degree with which the values were distributed around the mean (Razali & Wah, 2011). In the analysis, any value that was zero (0) meant that there was a symmetric distribution and kurtosis demonstrated the extent to which observations clustered about the mean. Clark, Creswell, Green and Shope (2008) has noted that normality is often measured using the Z-values of both skewness and kurtosis. The Z-values which should range from -1.96 to +1.96.

3.6.2 Autocorrelation

Durbin-Watson is applied when it comes to testing serial correlation in statistics that involves adjacent cases. Durbin-Watson statistic is used to elaborate if the assumptions that is held about the independent errors are tenable. The test statistic applied varied between 0 and 4. A value of 2 means there is uncorrelated residuals (Durbin & Watson, 1950). A greater value than 2 shows that there is a negative correlation and below shows that the correlation involved is positive.

3.6.3 Heteroscedasticity

Heteroscedasticity was tested using the graphical method (Osborne and Waters, 2002; Yan and Su, 2009) is applied in the examination of standardized plot based on regression. There is the scattering of the residual errors revealing an even distribution based on the homoscedastic data. The Koenker test was also used to test for heteroscedasticity. A distribution is said to be homoscedastic if the Koenker test p-values are greater than .05. According to Cai, Hurvich, and Tsai (1998) the Koenker test was found to perform well, in terms of power and size.

3.6.4 Multi-collinearity

Multi-collinearity in statistics refers to a situation that is not desirable whereby there is a strong correlation when it comes to independent variables. Hence, it creates a situation whereby the variables are not significant when they are supposed to be significant. Tolerance is calculated as $1-R^2$ when it comes to the independent variables. A tolerance that has a value that is almost 1 indicates that there is little multi-collinearity while a value that is almost close 0 reveals that there is a threat (Belsley, Kuh & Welsch, 2004). VIF is also used whereby it measures tolerance whereby if no 2 independent variables are correlated, then the value of the VIF will be 1, then among the factors, there will be no multicollinearity of the factors. However, if any value of one of the variables is above 5, then the variable will be linked to multicollinearity.

3.7 Data Analysis

The study used multivariate regression analysis as a statistical instrument in determining a relation among the variables under review. The model assumes the following expression:

Objective 2

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + \varepsilon$$

Where:

Y is organizational performance

B_0 is the constant, value of Y when X is zero

X_1 is strategic supplier partnership

X_2 is inventory management

X_3 is supply chain network design

B_1, B_2 & B_3 are the coefficients

Objective 3

    i) $Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + \varepsilon$

Where:

Y is organizational performance

B_0 is the constant, value of Y when X is zero

X_1 is strategic supplier partnership

X_2 is inventory management

X_3 is supply chain network design

X_4 is process formalization

B_1, B_2, B_3 & B_4 are the coefficients

    ii) $Y = B_0 + B_1X_1 + B_2X_2 + B_3X_1X_2 + \varepsilon$

Where:

Y is organizational performance

B_0 is the constant, value of Y when X is zero

X_1 is supply chain management practices

X_2 is process formalization

B_1, B_2 & B_3 are the coefficients

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS

4.1 Introduction

This chapter details the data analysis, findings and interpretations of the research study. Tables and figures have been used to present the findings based on frequencies, means, percentages and standard deviations. Regression and correlation analysis have been used. Data are based on the questionnaires that were issued to the participants.

4.2 Response Rate

A total of 48 freight handling facilities were chosen for the investigation. However, 30 facilities responded, representing a 62.5 percent response rate. There were 18 surveys that were not returned, accounting for 37.5 percent of the total. According to Mugenda & Mugenda (2012), a return rate of 60% is satisfactory. As a result, the study's response rate was satisfactory.

Table 4. 1 Response Rate

Details	Frequency	Percentage
Response	30	62.5%
Non- Response	18	37.5%
Total	48	100%

4.3 Reliability and Validity Tests

4.3.1 Reliability Test

Cronbach alpha was employed to assess reliability. The findings indicated that, strategic supplier partnership had a coefficient of 0.758, inventory partnership had a coefficient of 0.931, supply chain network design had a coefficient of 0.783, process formalization had a coefficient of 0.744 and organizational performance had a coefficient of 0.791. A value greater than 0.700 was obtained in all the sections and thus indicating reliability of the instrument. This is presented in the table 4.2.

Table 4. 2 Reliability Test

4.3.2 Validity Test

Construct	Cronbach's Alpha	Comments
Strategic Supplier Partnership	.758	Meet criteria
Inventory Management	.931	Meet criteria
Supply Chain Network Design	.783	Meet criteria
Process Formalization	.744	Meet criteria
Organizational Performance	.791	Meet criteria

Table 4. 3 Validity Test

Construct	Obtained Value	Significance level
Strategic Supplier Partnership	.587	.001
Inventory Management	.463	.010
Supply Chain Network Design	.614	.000
Regulatory frameworks	.516	.003
Policies and procedures	.595	.001
Departmental instructions	.645	.000
Fiscal viewpoint	.725	.000
Client viewpoint	.483	.007
Internal process viewpoint	.586	.001
Learning and growth viewpoint	.304	.102

Content validity was ascertained using a panel of experts, who checked that the questionnaire items were actually reflective of the constructs and variables of the study. The panel of experts agreed that the questionnaire items were a true reflection of the constructs and variables they were purported to represent. Pearson's correlation coefficient technique was applied to check the validity of the constructs. In this method, the obtained value should be above the critical value obtained from the critical values for Pearson's correlation coefficient table and the significance level should be less than .05. Since the sample size was 30, the degree of freedom was 28 and the critical value obtained from the critical values for Pearson's correlation coefficient table was .3610, most of the obtained values from the table above were greater than the critical value and the significance levels were less than .05 except for the last construct. This concluded that the instrument was valid.

4.5 Diagnostic Tests

Various diagnostic tests were used prior to conducting data analysis. Kurtosis and Skewness were tested using normality. Durbin-Watson Statistic tested autocorrelation, Koenker test was used to test for heteroscedasticity and test for multi-collinearity using Variance Inflation Factors (VIFs). All the values obtained for the various tests are discussed hereunder.

4.5.1 Tests for Normality

Table 4.4 shows a measure of skewness 1.372 Standard Error (SE) of 0.550 and Kurtosis measure of -0.149 (SE 1.063). These values were between -1.96 and 1.96. This shows that the data is slightly bent and kurtotic and is not significantly different from normality. Therefore, the study asserts that the data is distributed normally.

Table 4. 4 Skewness and Kurtosis

	Statistic	Std. Error
Skewness	1.372	.550
Kurtosis	-.149	1.063

4.5.2 Test for Autocorrelation

Durbin Watson test was used. The closer a value is to 2 the better, and for these data the value is 1.760, which is close to 2 there is almost realization of the assumption.

Table 4. 5 Test for Autocorrelation

Model	Durbin-Watson
1	1.760[a]

a. Predictors: (Constant), Process Formalization, Inventory Management, Supply Chain Network Design, Strategic Supplier Partnership

Dependent Variable: Organizational Performance

4.5.3 Test for Heteroscedasticity

The p-p plots showed a random scatter around the horizontal line suggesting homoscedasticity. Generally, the plots showed there is no heteroscedasticity and therefore statistical analysis would produce statistically significant results. Further, the Koenker test was used to test for heteroscedasticity and the result were as per the table below:

Table 4. 6 Test for Heteroscedasticity

Dependent Variable	Independent Variable	Koenker Test p-value
Strategic Supplier Partnership	Fiscal viewpoint	.631
Inventory Management	Client viewpoint	.017
Supply Chain Network Design	Internal process viewpoint	.127
	Learning and growth viewpoint	.380

29

Regulatory frameworks	Fiscal viewpoint	**.811**	
Policies and procedures	Client viewpoint	**.304**	
Departmental instructions	Internal process viewpoint	**.074**	
	Learning and growth viewpoint	**.956**	

From Table 4.6 above, the Koenker test p-values ranged from .017 to .956. The distribution is homoscedastic if the Koenker test p-values are greater than .05. Only one construct had a p-value below .05, therefore the distributions were generally homoscedastic.

4.5.4 Test for Multi-collinearity

VIFs was used to test Multi-collinearity. From Table 4.6 the VIF for supplier strategic partnership was 5.318, VIF for inventory management was 1.050, VIF for supplier chain network was 2.970 and VIF for process formalization was 5.440. it indicated that variance inflation factors of all the variables used as predictors were less than 10. Thus, multi-collinearity was absent.

Table 4. 7 Test for Multi-collinearity

Collinearity Statistics		
Independent Variables	**Tolerance**	**VIF**
Strategic Supplier Partnership	.188	5.318
Inventory Management	.953	1.050
Supply Chain Network Design	.337	2.970
Process Formalization	.184	5.440

After the data was found to be normal and also there being no autocorrelation and multi-collinearity amongst the study variables, the researcher proceeded to conduct parametric tests for the study variables.

4.3 Demographics

The respondents were asked to state their education level, length of service and work position. It was key in understanding respondents' background to have a better understanding of the responses that they gave.

4.3.1 Highest Level of Education

On the highest level of education attained, the respondents who had a certificate and diploma qualification were 7 and 6 respectively which represent 23.3% and 20% of the total number for respondents. The majority had a bachelor's degree at 15 which is 50% of the total number. Those with a post graduate degree were only 2 at 6.7% of the total. The study asserted that the respondents had the requisite education to be able to understand questionnaire's contents and answer to the attainment of the research objective.

Table 4. 8 Highest Level of Education

Highest Level of Education	Frequency	Percent
Certificate	7	23.3
Diploma	6	20.0
Bachelor Degree	15	50.0
Post Graduate Degree	2	6.7
Total	30	100.0

4.3.2 Length of Service

The respondents who had served for less than 5 years were 2 which represent 6.7% of the total number of respondents. The respondents who worked for 6-10 years were 9 which is 30% of the total. The majority had worked for 11-15 years which were 11 representing 36.6%. Those who had worked for more than 15 years were 8 which represent 26.7% of the total. The study concluded that the respondents served in their firms long enough to understand the contents of the questionnaire and share their knowledge in answering in a bid to attain the study objective.

Table 4. 9 Length of Service

Length of Service	Frequency	Percent
<5 years	2	6.7
6-10 years	9	30.0

11-15 years	11	36.6
>15 years	8	26.7
Total	30	100.0

4.3.3 Work Position

Those in the top management were 2 which represent 6.7% of the total. Those in the middle management were the majority at 17 which represent 56.7% of the total. Those who were in the technical/operational management were 11 which are 36.6%. The work positions were varied so well to be able to give diverse and heterogeneous answers for better analyses in a bid to meet the research objective.

Table 4. 10 Work Position

Work Position	Frequency	Percent
Top Management	2	6.7
Middle Management	17	56.7
Technical/operational Management	11	36.6
Total	30	100.0

4.4 Descriptive Statistics

The descriptive statistics for each variable in the study were conducted and explained

4.4.1 Supply Chain Management Practices

Various statements relating to SCM practices adopted by cargo handling/storage facilities were posed to the respondents using a Likert scaled questionnaire. The mean and std. dev. of the responses were tabulated and explained.

4.4.1.1 Strategic Supplier Partnership

Under strategic supplier partnership: Our firm share information on any new regulatory framework imposed on them and other operators/exporter/KPA had a mean of 4.73. This shows that the respondents asserted that this is practiced to a great extent in their firms. The corresponding std. dev. was the least at .450 revealing least response variation. Our firm collaborates with other operators/exporters/KPA to minimize risks in the supply chain with a mean of 4.67. This demonstrated that the respondents asserted that this is practiced to a great extent in their firms. The std. dev. of .479 showed that the responses were a bit varied. Our firm has a long term relationship with other operators/exporters/KPA chain had a mean of 4.60 which is near 5 on the Likert scale. This shows that the respondents asserted that this is practiced to a great extent in their firms. The standard deviation of .498 showed the level of variation of the responses was a bit higher. Our firm has a direct communication channel with other operators/exporters/KPA had a mean of 4.57 which is near 5 on the Likert scale. This shows that the respondents asserted that this is practiced to a great extent in their firms. Our firm does research to identify new emerging trends from other operators/exporter/KPA had a mean of 4.47. This shows that research is done to a great extent in the firms. The std dev. of .571 was the largest implying a high response variation.

Table 4. 11 Strategic Supplier Partnership

Strategic Supplier Partnership	Mean	Std. Deviation
Our firm share information on any new regulatory framework imposed on them and other operators/exporter/KPA.	4.73	.450
Our firm collaborates with other operators/exporters/KPA to minimize risks in the supply chain.	4.67	.479
Our firm has a long term relationship with other operators/exporters/KPA.	4.60	.498
Our firm has a direct communication channel with other operators/exporters/KPA.	4.57	.568
Our firm does research to identify new emerging trends from other operators/exporter/KPA.	4.47	.571

4.4.1.2 Inventory Management

Under inventory management: Our firm maintains optimal stock levels that minimize handling cost through implementation of best practices had a mean of 4.73. This shows that firms maintained optimal stock levels to a very great extent. The standard deviation of .450 was the least indicating least variation. Our firm has a tracking system to manage the levels of stock/cargo in its facilities had a mean of 4.63 which shows that tracking systems were used to manage stock/cargo levels to a very great extent. The standard deviation of .490 was the second least showing that the responses were secondly least varied. Our firm endeavors to ensure timely delivery of cargo to its customers had a mean of 4.60 implying that firms ensured timely delivery of cargo to its customers to a very great extent. Our firm effectively plans for anticipated future demands of stocks/cargo and our firm has an established inventory management system had means of 4.43 and 4.40 respectively which were near 4 on the Likert scale showing they were practiced to a great extent. The std dev. of .504 showed an abnormal variation in the responses.

Table 4. 12 Inventory Management

Inventory Management	Mean	Std. Deviation
Our firm maintains optimal stock levels that minimize handling cost through implementation of best practices.	4.73	.450
Our firm has a tracking system to manage the levels of stock/cargo in its facilities.	4.63	.490
Our firm endeavors to ensure timely delivery of cargo to its customers.	4.60	.498
Our firm effectively plans for anticipated future demands of stocks/cargo.	4.43	.504
Our firm has an established inventory management system.	4.40	.498

4.4.1.3 Supply Chain Network Design

Under supply chain network design, our firm uses the state-of-the-art equipment in order to minimize operational costs had a mean of 4.70. This shows that the firms practiced this to a very great extent. The standard deviation of .466 was the least implying that the responses were least varied. Our firm determines the best location of facilities and warehouses had a mean of 4.67 showing that practiced this to a very great extent. The corresponding standard deviation of .479 was the second least showing that in terms of variation of the responses the responses for this statement were second least varied. Our firm ensures on just in time delivery of cargo to its customers, our firm makes strategic decisions on location of distribution centers and our firm considers the best transport modes to deliver to the various cargo centers had means of 4.60, 4.53 and 4.50 respectively. This shows that these practices were exercised to a very great extent at the respective firms. The corresponding std dev. were .498, .507 and .509 respectively showing the degree of variation of the responses.

Table 4. 13 Supply Chain Network Design

Supply Chain Network Design	Mean	Std. Deviation
Our firm uses the state of the art equipment in order to minimize operational costs.	4.70	.466
Our firm determines the best location of facilities and warehouses.	4.67	.479
Our firm ensures on just in time delivery of cargo to its customers.	4.60	.498
Our firm makes strategic decisions on location of distribution centers.	4.53	.507
Our firm considers the best transport modes to deliver to the various cargo centers.	4.50	.509

4.4.2 Process Formalization

There is continuous review of departmental instructions to align the organization with emerging trends had a mean of 4.70 implying that to a very great extent there was a continuous review of departmental instructions. The standard deviation of .466 was the least showing that the responses for this statement were least varied. There are control measures to ensure staff adheres to SCM procedures put in place had a mean of 4.67 implying that to a very great extent there were control measures to ensure staff adheres to supply management procedures. The .479 value of standard deviation shows second least variation of the responses. There is a standard regulatory framework to guide staff on how to handle SCM practices had a mean of 4.60 showing that to a very great extent there was a standard framework to guide staff. The firm ensures employees are sensitized on any new policies and procedures to implement supply chain management practices had a mean of 4.53 showing that the respondents agreed to this statement to a very great extent. The standard deviation of .507 showed that the responses were highly varied.

Table 4. 14 Process Formalization

Process Formalization	Mean	Std. Deviation
There is continuous review of departmental instructions to align the organization with emerging trends.	4.70	.466
There are control measures to ensure staff adheres to supply chain management procedures put in place.	4.67	.479
There is a standard regulatory framework to guide staff on how to handle supply chain management practices.	4.60	.498
The firm ensures employees are sensitized on any new policies and procedures to implement supply chain management practices	4.53	.507

4.4.3 Organizational Performance of Cargo Handling/ Storage Facilities

The respondents indicated the extent to which their organizations implemented the four perspectives of the balance score card in the measurement of organizational performance. The responses were guided by a Likert scale their responses as per the Likert scale captured in the questionnaire.

4.4.3.1 Fiscal/Financial Viewpoint

The liquidity measures, profitability measures, efficiency measures, budgeting & forecasting and leverage measures all had mean values of 4.5 and above implying that these were to a very great extent considered in the firms. They were all used to a great extent in measuring the financial viewpoint of organizational performance. The standard deviation ranged from .466 to .568 showing the variation of the individual responses.

Table 4. 15 Fiscal/Financial Viewpoint

Fiscal/financial Viewpoint	Mean	Std. Deviation
Liquidity measures	4.70	.466
Profitability measures	4.63	.490
Efficiency measures	4.57	.568
Budgeting and forecasting	4.53	.507
Leverage measures	4.50	.509

4.4.3.2 Client Viewpoint

On the client viewpoint, customer acquisition/number of new customers, product design tailored to customer requirements, customer loyalty and retention had mean of 4.67 and a corresponding std dev. of .479. Customer satisfaction and behavior and market share had means of 4.60 and 4.50 respectively; their corresponding std dev. were at .498 and .509. They were all used to a great extent in measuring the client viewpoint of organizational performance.

Table 4. 16 Client Viewpoint

Client Viewpoint	Mean	Std. Deviation
Customer acquisition/Number of new customers	4.67	.479
Product design tailored to customer requirements	4.67	.479
Customer loyalty and retention	4.67	.479
Customer satisfaction and behavior	4.60	.498
Market share	4.50	.509

4.4.3.3 Internal Process Viewpoint

On the internal process viewpoint, continuous improvement and technological advancements had means of 4.67 and standard deviation of .479. Process innovation, process control and communication channels had means of 4.6, 4.57 and 4.53 and standard deviations of .498, .504 and .507 respectively. All the means were near 5 implying that these measures were all used in the internal processes to a very great extent

Table 4. 17 Internal Process Viewpoint

Internal Process Viewpoint	Mean	Std. Deviation
Continuous improvement	4.67	.479
Technological advancements	4.67	.479
Process innovation	4.60	.498
Process control	4.57	.504
Communication channels	4.53	.507

4.4.3.4 Learning and Growth Viewpoint

Employee satisfaction and attitudes, research and development, continuous training and development of employees, employee performance evaluation had means that were near 5 on the Likert Scale which means they were all present to a very great extent for learning and growth. Employee turnover had a mean that was near 4 which implies that to a great extent it existed.

Table 4. 18 Learning and Growth Viewpoint

Learning and Growth Viewpoint	Mean	Std. Deviation
Employee satisfaction and attitudes	4.70	.466
Research and development	4.63	.490
Continuous training and development of employees	4.63	.490
Employee performance evaluation	4.50	.509
Employee turnover	4.47	.507

4.5 Adoption of Supply Chain Management Practices

The mean and std dev. of the SCM practices were calculated and tabulated. Strategic supplier chain partnership was found to have a mean of 4.61 which shows that it was highly adopted by the firms, the corresponding std dev. of 0.308 shows that the responses for the practice were highly varied. Supply chain network design was the second most adopted supply chain management practice with a mean of 4.60; the standard deviation was the least at 0.263 implying that the variation of the responses was quite low. Lastly the least adopted supply chain management practice was inventory management with a mean of 4.56; its corresponding standard deviation was 0.275 implying that the variation of the responses for this practice was moderate.

Table 4. 19 Adoption of Supply Management Practices

Supply Chain Management Practices	Mean	Std. Deviation
Strategic Supplier Partnership	4.61	.308
Supply Chain Network Design	4.60	.263
Inventory Management	4.56	.275

4.6 The Relationship between SCM Practices and Organizational Performance

The SCM practices were regressed against organizational performance and tabulated as below. This was to establish the relationship between the SCM practices and organizational performance.

Table 4. 20 Relationship between SCM Practices and Organizational Performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.794	.505		1.573	.128
Strategic Supplier Partnership	.427	.146	.596	2.923	.007
Inventory Management	.041	.195	.026	.208	.837
Supply Chain Network Design	.185	.181	.208	1.020	.317
a. Dependent Variable: Organizational Performance					

$Y=0.794+0.427 X_1+0.041X_2+0.185X_3$

With the absence of the SCM practices, the organizational performance is at 0.794. When strategic supplier partnership increases by 1 unit, organizational performance increases by 0.427. When inventory management increases by 1 unit, organizational performance increases by 0.41 units. Finally, when supply chain network design increases by 1 unit, organizational performance increases by 0.185 units.

4.7 The Mediating Effect of Process Formalization on Supply Chain Management Practices and Organizational Performance

Regression analysis was done, first for SCM practices, process formalization and organizational performance. Secondly regression was done to establish the mediating effect of process formalization on SCM practices and performance of an organization. These are presented sequentially as in the following sections.

4.7.1 Regression without the Mediating Effect

Table 4.20 shows the SCM practices (strategic supplier partnership, inventory management and supply chain network design), process formalization and organizational performance model summary. This was done with the aim of finding the relationship of the variables without the mediating role

Table 4. 21 Model Summary for all Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.821[a]	.674	.622	.38648	1.760

a. Predictors: (Constant), Process Formalization, Inventory Management, Supply Chain Network Design, Strategic Supplier Partnership

In Table 4.20, the adjusted R- square value indicates that 62.2% of the total variance of organizational performance is explained by the model. Adjusted R- square is at 62.2% which shows the degree of interaction between the process formalization, inventory management, supplier chain network, strategic supplier partnership and organizational performance. This shows that 37.8% of the variation of organizational performance the model cannot be explained. Variance analysis was also calculated and analyzed.

Table 4. 22 ANOVA for all Variables

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.726	4	1.932	12.932	.000[b]
Residual	3.734	25	.149		
Total	11.460	29			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Process Formalization, Inventory Management, Supply Chain Network Design, Strategic Supplier Partnership

Table 4.21 shows that the regression to residual ratio is positive; there is a significant relationship between the independent and dependent variables in the study. Table 4.21, process formalization, inventory management, supply chain network design, strategic supplier partnership affects organizational performance for the cargo handling facilities since 0.000<0.05 at 5% level of significance. Also the F-calculated was 12.932 and the F-critical at (4, 29) degrees of freedom was 2.55, showing significance since 12.932>4.07 at 5% level of significance. The co-efficients of the model are shown Table 4.22.

Table 4. 23 Coefficients of the Model for all Variables

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.750	.451		1.664	.109
Strategic Supplier Partnership(X_1)	.141	.195	.198	.721	.478
Inventory Management(X_2)	-.066	.160	-.050	-.413	.683
Supply Chain Network Design(X_3)	.158	.108	.199	1.458	.157
Process Formalization(X_4)	.383	.205	.500	1.866	.074
a. Dependent Variable: Organizational Performance					

$$Y = 0.750 + 0.141X_1 - 0.066X_2 + 0.158X_3 + 0.383X_4$$

When the strategic supplier partnership, inventory management, supply chain network design and process formalization are all zero, the organizational performance is .750. When strategic supplier partnership has a 1-unit increment, performance of the firm is expanded by 0.141 units. When inventory management increases by one unit there is 0.066 units reduction in the performance. When supply network design increases by one unit the increases of 0.158 units are seen when it comes to organizational performance. Finally, when process formalization has a 1-unit increase, the organizational performance increases by 0.383 units.

4.7.2 Regression with the Mediating Effect

The model summary of the regression with the mediating effect of process formalization was tabulated as Table 4.23 below

Table 4. 24 Model summary with Mediating Effect

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.902[a]	.814	.792	.28661

a. Predictors: (Constant), SCM PracticesNProcess Formalization, SCM Practices, Process Formalization

In Table 4.23, the adjusted R- square value indicates that 79.2% of the total variance of organizational performance is explained by the model. Adjusted R- square is at 79.2% which shows the degree of interaction between the process formalization, inventory management, supplier chain network, strategic supplier partnership and organizational performance. This shows that the mediating effect has contributed to 17.0% of the variance. This shows that 20.8% organization's performance variation in the model can't be explained. Variance analysis was also calculated and analyzed.

Table 4. 25 ANOVA with the Mediating Effect

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.325	3	3.108	37.837	.000[b]
Residual	2.136	26	.082		
Total	11.460	29			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), SCM PracticesNProcess Formalization, SCM Practices, Process Formalization

Table 4.24 shows that the regression to residual ratio is positive; a positive relationship is there between the independent and dependent variables applicable to the study. Table 4.24, shows the mediating effect of process formalization, SCM Practices and process formalization affect organizational performance for the cargo handling facilities since 0.000<0.05 at 5% level of

significance. Also, the F-calculated was 37.837 and the F-critical at (4, 29) degrees of freedom was 2.70, showing significance since 12.932>2.70 at level of significance at 5%. The co-efficients of the model are shown Table 4.25.

Table 4. 26 Coefficients of the Model with Mediating Effect

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-2.499	.683		-3.657	.001
SCM Practices (X_1)	1.550	.312	1.181	4.972	.000
Process Formalization (X_2)	2.192	.377	2.859	5.813	.000
SCM PracticesNProcess Formalization (X_1X_2)	-.693	.148	-3.026	-4.693	.000

a. Dependent Variable: Organizational Performance

$Y = -2.499 + 1.550 X_1 + 2.192 X_2 - 0.693 X_1 X_2$

With the absence of all variables, the organizational performance is -2.499. When SCM practices increase by 1 unit, there is 1.550 units increment in performance. When process formalization increases by one unit, the performance of the organization increases by 2.192 units. When the mediating effect of SCM practices and process formalization improves by a single unit, performance of the organization decreases by 0.693 units.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the research findings, conclusions and recommendations for further study. This chapter is based on the results of Chapter 4. This is the last section of this study.

5.2 Summary of the Findings

The study targeted a sample of 48 cargo handling facilities and managed a 62.5% response rate. The response rate was good and deemed fit for the study. The respondents were asked to state their education level, length of service and work position. The study asserted that the respondents had the requisite education, served in their firms long enough to be able to understand the contents of the questionnaire and answer to the attainment of the research objective. The work positions were varied so well to be able to give diverse and heterogeneous answers for better analyses in a bid to meet the research objective.

The study sought to find out the SCM practices adopted by cargo handling/storage facilities. Through the entire study it was evidence that strategic supplier partnership, inventory management and supply chain network design as SCM practices were present in the firms. Further, mean and std dev. of the SCM practices calculated and tabulated revealed that Strategic supplier chain partnership was highly adopted by the firms since it was found to have a highest mean value which resulted from these firms shared information on any new regulatory framework imposed on them and other operators/exporter/KPA, collaboration with other operators/exporters/KPA to minimize risks in the supply chain and long term relationship that existed with other operators/exporters/KPA. Supply chain network design was the second most adopted supply chain management practice as per the attained mean value which resulted from the firms use of the state of the art equipment in order to minimize operational costs, determining of the best location of facilities and warehouses, ensuring on just in time delivery of cargo to its customers, the strategic decisions on location of distribution centers and the firms consideration of the best transport modes to deliver to the various cargo centers. While the least adopted supply chain management practice was inventory management with the least mean value which resulted from the firms maintenance of optimal stock levels that minimize handling cost through implementation of best practices, the firms tracking system to manage the levels of stock/cargo

in its facilities, the firms endeavor to ensure timely delivery of cargo to its customers, the firms effectively planning for anticipated future demands of stocks/cargo and these firms having an established inventory management system.

The study also sought to establish the relationship between the SCM practices and organizational performance. It was revealed that there was increased organizational performance with the presence of strategic supplier partnership, inventory management and SC network design as SCM practices in the firms. So, the study went on further to ascertain its role on organizational performance. The organizational performance of cargo handling/ storage facilities was also pursued by the study. This showed that the firms were adept in tracking their performance from the internal process perspective, financial perspective and learning and growth customer based perspective.

Further, the study sought to establish whether there was a mediating effect of process formalization. There was continuous review of departmental instructions to align the organization with emerging trends. There were control measures to ensure staff adheres to supply chain management procedures put in place. There was a standard regulatory framework to guide staff on how to handle supply chain management practices. The firm ensured employees are sensitized on any new policies and procedures to implement SCM practices. This showed that there was process formalization in the cargo handling firms.

The empirical studies revealed that SCM practices implementation can greatly improve organizational performance (Petrovic-Lazarevic et al., 2007; Khaseke, 2015; Watulo, 2017; Omariba, 2014; Shalakha, 2015; Mansaray, 2018; Mwale, 2014. The results of this study also confirms that implementation of SCM practices greatly improve organizational performance. The empirical studies have also suggested that process formalization mediates the relationship between SCM practices and firm's performance (Daugherty et al., 1992; Meirovich et al.,2007).

5.3 Conclusion

The study concluded that the SCM practices employed by the facilities are inventory management, supplier chain network design and strategic supplier partnership. On the level of adoption, strategic supplier chain partnership was found to be highly adopted by the firms. This

was followed by supply chain network design and lastly the least adopted SCM practice was inventory management. The study further concluded that SCM practices have a statistically significant effect on the organizational performance of cargo handling/storage facilities in Kenya. The results indicated that the mediating variable has a statistically significant effect on the organizational performance of cargo handling/storage facilities in Kenya.

Without the mediating effect the SCM practices (strategic supplier partnership, inventory management and supply chain network design), process formalization and organizational performance were significantly related. Organization's performance variation caused by variables that are independent was at 62.2%. The unexplained variation was at 37.8%.

With the mediating effect degree of interaction between the process formalization, inventory management, supplier chain network, strategic supplier partnership and organizational performance was at 79.2%. This shows that the mediating effect has contributed to 17% of the variance. The unexplained variation was 20.8%.

5.4 Recommendation

The research recommends policy- makers in the supply chain industry to take note of the mediating role of process formalization. Its contribution SCM practices and organization's performance relationship is significant and should be factored in. This should be done especially in policy making.

The study recommends that industry players to make sure that they embed process formalization in their operations. These process formulation strategies are geared towards upholding the SCM practices in order to enhance performance and growth in the industry.

5.5 Limitation of the Study

Study's findings are not representative and thus are applicable only to cargo handling/storage facilities in Kenya. Hence, they can be only used as comparison only.

The research focused on the cargo handling/storage facilities in Mombasa. It did feature only ICD Embakasi, Nairobi and not any other company in Kenya. This was as result of limited

resources and time. The respondents were difficult to convince, they only took part after they were told that it was an academic research only.

5.6 Suggestion for Further Study

The research proposes studies to be carried out throughout the region and compares the results. The study can also be replicated with other industry players. It would be exiting to find out how in other economies the results of similar studies.

The research suggests that its vital to establish 20.8% of the factors which influence the organizational performance cargo handling firms but were not shown in this regression model. This will enhance conclusive determination of the factors. When the factors are determined conclusively then the scholars, policy makers and industry players may find benefit in the studies hence conducted.

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APPENDIX I: QUESTIONNAIRE

SECTION A: GENERAL INFORMATION

1. What is your highest level of education?

Certificate   [ ]   Diploma   [ ]

Bachelor degree   [ ]   Postgraduate degree [ ]

2. How long have you worked with this firm?

Less than 5 years   [ ]   6 – 10 Years   [ ]

10 - 15 years   [ ]   More than 15 years [ ]

3. What level/position do you hold in this firm?

Top Management   [ ]

Middle Management [ ]

Technical/Operational[ ]

SECTION B: SUPPLY CHAIN MANAGEMENT PRACTICES ADOPTED BY CARGO HANDLING/STORAGE FACILITIES

The following are statements relating to supply chain management practices adopted by cargo handling/storage facilities. Rate the extent to which they are applied on a scale of 1-5 where 1= no extent, 2=little extent, 3= moderate extent, 4= great extent, and 5= Very great extent

Strategic supplier partnership

Statement	1	2	3	4	5
Our firm has a long term relationship with other operators/exporters/KPA.					
Our firm has a direct communication channel with other operators/exporters/KPA.					
Our firm does research to identify new emerging trends from other operators/exporter/KPA.					
Our firm share information on any new regulatory framework imposed on them and other operators/exporter/KPA.					
Our firm collaborates with other operators/exporters/KPA to minimize risks in the supply chain.					

Inventory management

Statement	1	2	3	4	5
Our firm has an established inventory management system.					
Our firm maintains optimal stock levels that minimize handling cost through implementation of best practices.					
Our firm effectively plans for anticipated future demands of stocks/cargo.					
Our firm has a tracking system to manage the levels of stock/cargo in its facilities.					
Our firm endeavors to ensure timely delivery of cargo to its customers.					

Supply chain network design

Statement	1	2	3	4	5
Our firm makes strategic decisions on location of distribution centers.					
Our firm ensures on just in time delivery of cargo to its customers.					
Our firm determines the best location of facilities and warehouses.					
Our firm consider the best transport modes to deliver to the various cargo centers.					
Our firm uses the state of the art equipment in order to minimize operational costs.					

SECTION C: PROCESS FORMALIZATION

Below are statements relating to process formalization. Kindly rate these statements on a scale of 1-5 where 1= no extent, 2=little extent, 3= moderate extent, 4= great extent, and 5= Very great extent as it relates to your organization.

Statement	1	2	3	4	5
There is a standard regulatory framework to guide staff on how to handle supply chain management practices.					
The firm ensures employees are sensitized on any new policies and procedures to implement supply chain management practices					
There is continuous review of departmental instructions to align the organization with emerging trends.					

There are control measures to ensure staff adhere to supply chain management procedures put in place.					

SECTION D: ORGANIZATIONAL PERFORMANCE OF CARGO HANDLING/STORAGE FACILITIES

Please indicate to what extent your organization implemented the four perspectives of the balance score card in the measurement of organizational performance. Rate on a scale of 1-5 where 1= no extent, 2=little extent, 3= moderate extent, 4= great extent, and 5= Very great extent

Fiscal/Financial viewpoint

Statement	1	2	3	4	5
Budgeting and forecasting					
Profitability measures					
Leverage measures					
Liquidity measures					
Efficiency measures					

Client viewpoint

Statement	1	2	3	4	5
Customer satisfaction and behavior					
Market share					
Customer loyalty and retention					
Product design tailored to customer requirements					
Customer acquisition/Number of new customers					

Internal process viewpoint

Statement	1	2	3	4	5
Process innovation					
Technological advancements					
Communication channels					

Process control					
Continuous improvement					

Learning and growth viewpoint

Statement	1	2	3	4	5
Research and development					
Employee performance evaluation					
Continuous training and development of employees					
Employee turnover					
Employee satisfaction and attitudes					

APPENDIX II: LIST OF CARGO FACILITIES

a. **Container Terminals at KPA:**

1. Kipevu container terminal
2. Mombasa container terminal

b. **GBH**

c. **CFS:**

1. MCT
2. Mitchell Cotts 1
3. Kencont
4. Multiple Inland Container Depot
5. Consolbase 1 (FFK)
6. Interpel
7. Boss Freight
8. Siginon Freight Ltd
9. Compact
10. Awanad
11. African Line
12. Portside
13. Mitchell Cotts 2
14. Consolbase 2
15. Focus
16. Unifreight
17. Mombasa Island Cargo Terminal
18. Makupa
19. Great Lakes
20. Autoport

d. **Customs bonded warehouses:**

1. Kenya Bonded warehouse – BMSA 005
2. Kenya Bonded warehouse – BMSA 023
3. Mitchell Cotts – BMSA 063
4. Ufanisi Freighters – BMSA 197
5. Bata Shoe – BMSA 334
6. East African Packaging Industries – BMSA 368
7. Consolidated – BMSA 372
8. James Finlay – BMSA 456
9. Bryson Express – BMSA 475
10. Branded Fine Foods – BMSA 509
11. Standards Rolliing Mills ltd – BMSA 039

12. Corrugated Sheets ltd – 414
13. Chai warehousing – BMSA 442
14. Corrugated Sheets ltd – BMSA 486
15. Combined warehouse ltd – BMSA 008
16. Ass. Vehicle Assemblers – BMSA 064
17. Steel Makers ltd – BMSA 430
18. Marshalls East Africa – BMSA 002
19. Transtrailers ltd – BMSA 546
20. Doshi Enterprises – BMSA 120
21. Mabati Rolling Mills – BMSA 095
22. Kenya General Industries ltd – BMSA 445
23. CMC Motors – BMSA 165
24. UNESCO Paper Industries ltd – BMSA 505

e. **ICD-Embakasi**

APPENDIX III: INTRODUCTORY LETTER FOR THE RESEARCH

UNIVERSITY OF NAIROBI
COLLEGE OF HUMMANITIES & SOCIAL SCIENCES
SCHOOL OF BUSINESS

Telephone:	4184160-5 Ext 215	P. O. Box 30197
Telegrams:	"Varsity" Nairobi	Nairobi, Kenya
Telex:	22095 Varsity	

25th August 2020

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: INTRODUCTORY LETTER FOR RESEARCH
JOSEPH REX RIGHA – REGISTRATION NO D61/68100/2013

The above named is a registered Master of Business Administration (MBA) student at the University of Nairobi, School of Business. He is conducting a research on *"Supply Chain Management Practices, Process Formalization and Organizational Performance of Cargo Handling Facilities in Kenya".*

The purpose of this letter is to kindly request you to assist and facilitate the student with necessary data which forms an integral part of the research project. The information and data required is needed for academic purposes only and will be treated in **Strict-Confidence.**

Your co-operation will be highly appreciated.

Thank you

Mwanyota Job Lewela
Department of Management Science
School of Business