SUPPLY CHAIN MANAGEMENT PRACTICES AND OPERATIONAL PERFORMANCE OF MULTINATIONAL MANUFACTURING FIRMS IN KENYA

BY:

RONALD CHEBOI CHESARO

SUPERVISOR:

MICHAEL K. CHIRCHIR

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DECLARATION

This research project is my original work and has not been carried out in any other university.

Signed: ……. Date: ……

RONALD C. CHESARO

REG: D61/72405/2011

The research project has been submitted for examination with my approval as the university supervisor

Signed: ……. Date: ……..

MICHAEL K. CHIRCHIR

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DEDICATION

This project is dedicated to my beloved family for their inspiration, moral support and encouragement.

ABSTRACT

This study was conducted to determine the relationship between supply chain management practices and operational performance of Multinational Manufacturing Firms in Kenya. The study had two objectives; to identify the supply chain Management practices used by Multinational Manufacturing Firms in Kenya; to establish the relationship between supply chain practices and Operational performance of Multinational Manufacturing Firms in Kenya. The research design adopted a census study survey. The population of the study consisted of 45 Multinational Manufacturing companies in Nairobi. Data was collected using a questionnaire from all the senior procurement officers and their assistants. Data was analyzed using descriptive statistics and a regression model used to establish the relationship between variables. The response rate was 86.67% which was considered sufficient for making generalizations of the whole population. The study found that most Multinational Manufacturing Companies have adopted supply chain management practices to a great extent which has enhanced service delivery, improved decision making enhanced overall cost reduction and real time delivery of goods and services. The study found that the relationship between supply chain management practices and Operation performance as represented by R^2 was 0.6654 translating to 66.54% of the variations in operational performance being explained by the independent variable under study. The study therefore recommends that Multinationals put in place measures to that will ease adoption of supply chain management practices to improve their operational performance. The findings of this study and application thereof are however limited to MNC firms in the manufacturing sector in Kenya only, further research is therefore recommended for all Manufacturing companies across the industry to account for the 33.46% that is not explained by the regression model used for this research.

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ABBREVIATIONS AND ACRONYMS

FMCG	**:**	Fast Moving Consumer Goods
GSCM	**:**	Green Supply Chain Management
OMC	**:**	Oil Marketing Companies
MNCs	**:**	Multinational Companies
RBV	**:**	Resource Based View
SCM	**:**	Supply Chain Management
TPL	**:**	Third Party Logistics
SCP	**:**	Supply Chain Performance
SCOR	**:**	Supply Chain Operations Reference Model
SMEs	**:**	Small and Medium size Enterprises
BSC	**:**	Balanced Score Card
SCPM	**:**	Supply Chain Performance Measurement

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Supply chain management has increasingly become an important topic of study by researchers as well as organizations involved in business. Focus has been on the creation of an effective supply chain which has been known to be a critical tool in product and service management and improving the competitive advantage for firms (Christopher, 1998).The concept of supply chain management plays critical role in aiding firms improve performance. Supply chain management (SCM) refers to the strategic management of resource movement along the supply chain. To add value, supply chains need to be organized in such a way that creates workable processes and goals among the supply chain members.

SCM contributes to the success of firms in the manufacturing sector in Kenya. It involves the association between a company, vendors and its customers. It is also considered as a network of organizations working together with their key stakeholders to efficiently supply product to customers. Multinational companies operate their businesses in global platforms which have increasing complexities due to interconnected processes of globalization and internationalization of businesses (Ball et al., 2008 and Boschman, 2006). Companies have to involve all parties and incorporate their activities to form a seamless and efficient network of processes and functions to produce goods and offer services that meet the needs of customers

Multinational corporations (MNC) have for a long time played a critical role in international trade and they are key players in the global economy through their activities in the host countries (Ogutu and Samuel, 2011). In Kenya, there are many multinational companies that operate in the manufacturing sector. The greatest challenge facing MNCs is fierce market competition forces and changing business priorities in the host countries (Ekaterina, 2008) .It is therefore crucial for these companies to analyze and review their supply chain activities and the resulting effect on other member firms in the supply chain (Cooper et al., 1997).By implementing these practices, they can improve value and competitive position in the market alongside other local businesses.

1.1.2 Supply Chain Practices

Lyson and Farrington (2006) points out that supply chain management can be explained as the sum of all activities, information, knowledge and financial capabilities associated with the movement and transformation of goods and services up from raw-materials to final goods delivered to customers by suppliers, in such a way that their needs are met or exceeded.

Li, W.Gao, F.B., (2005) defined supply chain management practices as chain of activities applied by an organization to improve the management of its supply chain. Studies have been conducted to identify different supply chain practices in different sectors. Kuei et.al (2001) tested several management tools to analyze and test top manager's response on the relationship between supply chain quality management practices and organizational performance. These factors included; management leadership, training; product design, supplier quality management; process management; quality data reporting, employees' relationships; customers' relations, benchmarking; supplier selection; and supplier participation. The study concluded that the overall perception on improvements in organizational performance were associated with improvements in supply chain quality management.

Koplin et.al. (2007) empirically tested various SCM practices and how these practices related with the organizational performance for SMEs in Turkey. Twelve SCM practices identified included supplier partnerships, customer relationship, benchmarking; Just in time processes and e-procurement, few suppliers; many suppliers; strategic planning; outsourcing; sub-contracting of activities ; holding buffer stock and third party logistics (3PL).

David, et al, (2014) identified seven principles (Practices) of supply chain management that applied together can enhance revenue, assets utilization as well as customer satisfaction. These principles include The 5 rights; where the buyer ensures that materials or goods are of the right quality, right quantity are delivered to the right place at the right time for the right price; Cost management which ensure that purchasing efficiency and effectiveness contribute to organization's cost saving and hence bottom line profit by considering total cost of ownership and by putting in place an efficient and effective delivery system and inventory management. Another principle is supplier management, which means building a cordial working relationship between the purchasing organization and the supplier. Fourthly; Quality control which is an approach to performance improvement that integrates supply chain parties and boosts advantages created by upstream and downstream linkages with emphasis on creating value and achieving satisfaction for intermediate and final consumer.

The fifth principle is specification which serves two purposes; to communicate the buyer's need and to establish the criteria by which to judge what is eventually delivered. Next is Price negation where a professional purchaser goes into price negation having undertaken a purchasing research on demand analysis, vendor analysis and supply market analysis. This provides information so that the firm can adapt to changes in supply environment and ensure competitive advantage on opportunities (CIPS). Lastly use of technology whereby the buyer uses electronic methods to undertake sourcing and procurement of goods and services. The use of technology integrates chain members, the supplier, the buyer, and the customer for efficient and effective supply chain management.

1.1.2 Operational Performance

Voss et al., (2012) explains that operational performance refers to aspects of an organizations process which can be quantified .It includes variables such production reliability and defect rates, cycle time, on time delivery, cost of quality and scrap reduction, productivity, and inventory management. Srinivasan et al. (2011) explained the concept of supply chain performance as the extent of performance of the processes included within the firm's supply chain department. Some of the measures specifically used to determine the supply chain performance of a firm include supplier performance, customer satisfaction, stock costs, and number of on-time deliveries, product availability performance and lead time.

Performance measurement is defined as the process of quantifying the efficiency and effectiveness of a given process or function. (Gunasekaran and Kobu, 2007). Effectiveness is the level that customer's requirements are met and efficiency monitors usage of a firm's resources when providing a pre-specified level of customer satisfaction (Sheperd and Gunter, 2006).Hence, performance measurement is an important factor that improves supply chains' effectiveness and efficiency (Beamon, 1999). It is the responsibility of the decision-makers to develop metrics for evaluating performance.

Birech (2011) highlighted various performance metrics within operations area which include productivity measures, quality measures, inventory measures, lead-time measures, preventive maintenance measures, performance to schedule, and utilization; Specific measures which include cost of quality, variances, period expenses, safety measured on some common scale such as number of hours without an accident, profit contribution, measured in dollars or some common currency.

Elisa, et al., (2013) explained that organizations that have adopted the Total Quality Management (TQM) approach have depicted a positive relationship with the improvement of

general performance, improved operation efficiency and with better financial results. He empirically tested various operational management practices and their effect on performance. Benefits included economic performance derived from improved efficiency in operations; waste reduction and a vision for continuous improvement. Lean systems were found to have a positive effect on organization operational performance. It is therefore management role to involve all the chain members in order to ensure that all activities and functions work together.

1.1.3 Multinational Manufacturing Firms in Kenya

Multinational companies (MNCs) are corporations with huge investments in foreign countries and are involved in management of these overseas investments (London and Stuart. 2004). MNCs can also be defined as organizations that have established identical units of their domestic business in different countries and markets. MNCs include fast food companies, Fast moving consumer goods (FMCG) manufacturers, motor vehicle assembly, consumer electronics companies and energy companies. Most of the largest corporations operate in many foreign markets. Multinational corporations (MNCs) contribute significantly to the global economy by the internationalization and globalization of businesses.

Manufacturing companies can be defined as firms that buy certain product as inputs and processes (transforms) these inputs to a value added final product for sale. Based on data from the Kenya Association of Manufacturers (KAM), the manufacturing sector plays a significant role in the overall economic performance in the country contributing to the country's GDP and government revenue through taxes. Despite the small number of firms, MNCs contribution in the manufacturing industry is significant, employing 88 percent of total labor force in the industry, with value added and value output of 74 percent and 88 percent respectively in 2005 (Central Bureau of statistics 2006).

In order to remain competitive, most of the multinational companies operating in Kenya have pursued and expansionary strategy, (Owour, 2011) .The expansion strategies have been due to firm’s competitive ability and also due to other factors like Kenya being a preferred destination by other industry players and market analysts and also being an important player in the East Africa community common market. A number of MNCs have announced expansion plans to take advantage of new demand in Kenya and the emerging Eastern Africa market.

1.2 Research Problem

Supply chain is one of the areas identified by researchers as having a great potential to boost efficiency and reduce costs of most manufacturing firms. Burgress Singh and Koroglu, (2006) highlighted the importance of SCM but noted there is little research done on supply chain practices. Any inefficiency incurred by any of the supply chain members can impact on the performance of the whole chain. This is because inefficiencies add to the company costs in the long run. Timely exchange of information in the SCM at the right time helps to improve the performance of all the members in the chain (Chopra &Meindi, 2010) by reducing variations and shifts in inventory and customer demands.

Information is a key resource in supply chain management and coordination hence the need for it to be managed so that all the supply chain teams can achieve their objectives. Researchers have examined the relationship between SCM practices and firm performance; they conclude that SCM practices have a positive impact on firm performance at the operations level, as well as at the business level (Cheng et al., 2012). Suhong, Ragu-Nathan, and Subba Rao, (2014) examined the effect of supply chain management practices on competitive advantage and organizational performance. The results indicate that consistent application SCM practice can lead to improved competitiveness and organizational performance.

Fazila (2013) sought to explain the relationship between supply chain management (SCM) practices and supply chain responsiveness (SCR) in relation to competitive advantage (CA). The results indicated a positive relationship between SCM practices, SCR and competitive advantage. Supalak (2010) examined supply chain management practices on the hotel food supply chains in south England. It was established that higher levels of service delivery translated to more flexibility regarding supplier selection at property level. It also revealed that service delivery will lead to more the more flexible and centralized sourcing techniques.

Locally, studies have also been carried out on supply chain management .Shalakha (2015) in his research on innovative supply chain management practices of oil marketing companies in Kenya revealed that the key challenges facing oil marketers in the implementation of innovative supply chain management practices were; lack of proper training, failure to invest in modern technologies and lack of commitment by the top management. Miyare (2014) studied supply chain management practices and organizational performance of Kenolkobil limited. The findings revealed a strong relationship with their organizational performance.

Barua (2013) investigated the challenges facing oil marketing companies in the application of supply chain management principles. The study found that the challenges were as follows:

transportation, equipment, communication, supplies innovation and finances. Mogire (2011) investigated the supply chain management practices in five star hotels in Kenya and established that the major hindrances to be collaboration during planning, lack of understanding of the SCM Concept. The study also established that there were strategic relationships with suppliers and customers within the hotel industry, it did not however reveal about long term relationships between suppliers and clients. Even though the study shows that five star hotel industries have adopted supply chain practices in their operations they have not fully embraced the practices.

Mwirigi (2007) studied the green supply chain management concept in relation to manufacturing firms in Kenya. The study looked into four areas of green supply chain management practices namely; green purchasing, design for environment, reverse logistics and green marketing. The research established that green supply chain management practices contributed to reduction of environmental challenges a proportion which is contributed by manufacturing firms. The above studies however failed to demonstrate the link between supply chain management practices and operational performance of multinational companies in the manufacturing sector in Kenya. This study therefore sought to explain the existing knowledge gap by answering the following questions: What are the supply chain management practices implemented by multinational manufacturing companies in Kenya? What is the effect of these SC practices on the operational performance of multinational manufacturing firms in Kenya?

1.3 Research Objectives

The research had the following main objectives:

i. To determine the extent to which the supply chain practices are implemented by Multinational Manufacturing firms.
ii. To establish the effect of supply chain management practices on the operational performance of Multinational Manufacturing firms in Kenya

1.4 Value of the Study

The study will be of use to both private and public organizations in Kenya as it will give further insight into the understanding of SC practices, and how such practices are influencing operational performance.

The study will also be useful to the government agencies and institutions to guide policy makers on existing SC practices among research institutions and challenges faced in implementing SC practices.

Finally, the academic community will benefit from the findings of the study as it will serve as a good source of information on empirical data pertaining to SC practices and it will also identify areas for further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter explores the theoretical literature review, supply chain management practices, operational performance measurement, SCM practices and operational performance and the conceptual framework.

2.2 Theoretical Literature Review

SCM practices are important to any organization as they improve an organizations leadership in the market, profitability and improves overall strategic positioning through the market variables which include price, cost, quality, delivery, and product innovation among others (Wisner 2001).Three theories explain the SCM practices concept: Systems theory, Contingency theory and Resource-Based View Theory.

2.2.1 Systems Theory

This theory argues that an event is seen as a whole and not a function of its sub systems (Martinelli,2001).A system comprises of sub systems whose interrelationship and inter dependence move towards equilibrium of a larger system (Steele, 2003).The focus is on the relationship among subsystems in order to better understand an entity's organization, functioning and results. It also views the organization as dependent on the environment it operates in which involves various parties which include agents, shareholders and other factors beyond the organization control (Mason, 2007).

Systems theory incorporates various supply chain variables which then form a larger system of supply chain networks (Fowler, 2000).It also helps to reveal the extent of dependence between constitutes of the system and a better understanding of the dynamics of the SC hence improve planning, execution and coordination of activities of manufacturing companies.

2.2.2 Contingency Theory

The theory argues that under different situations, different solutions may prove important (Antal, 2010).Instead of applying common management principles, the theory seeks to demonstrate that different circumstances require different organizational set ups and infrastructure (Baranyi, 2001).Organizations are limited by several factors for example size of the firm, environment and information technology. These contingencies are designed for developing the specific structures and functions of an organization.

Robin and Barwell (2007) stated that in order to improve the operational capacity for producing innovative products, a company must alter its organizational features and organize its key factors to form a robust and flexible supply chain (Lee 2001).

Multinational Manufacturing Companies in Kenya operate in a competitive environment; therefore the Contingency theory will be a key SCM driver in planning and aligning their operations towards improving operational performance.

2.2.3 Resource Based View Theory

This theory highlights the gains a company acquires by possessing the necessary resources required for its survival. These may be in form of financial muscle, physical locations, human labor and effort, technological advancements among other capabilities. These resources and capabilities set a firm apart from the rest and forms part of its competitive advantage. Possession of products and services with unique characteristics or specific and detailed work procedures will shut out competition for firm's resources and capabilities (Prahalad& Hamel, 1990).

Organizations adaptability to industrial and market changes can also be considered an opportunity in order to cope with global competition. Well-managed supply chain is essential to create competitive advantage and value (Lambert&Cooper, 2000).Competition is no longer specific to individual firms but rather it is supply chain against supply chain (Min&Mentzer, 2004).Benefits for this theory therefore accrue directly to operational performance (Deere,2006)

2.3 Supply Chain Management Practices

SCM practices impact on every organization; hence to be relevant and dominant in current competitive environment, managers of the organizations have to put more effort in their key result areas. Chima (2007) put forward various SCM practices including supplier collaboration, customer focus, good information channels, and postponement. The following have been deemed relevant for this study.

2.3.1 Supplier Relationship Management

This is the relationship that exists between the organization and its vendors within the organization hierarchy. It explains how the firms engage and relate with their suppliers of their key resources. Active engagement with suppliers and existence of a comprehensive supplier development frame work is a key tool. Coordinating operational activities through joint planning with suppliers result in removal of excessive inventory, lower manufacturing costs, enhancement of demand uncertainty and increased revenue (Arshinder, 2008).It also helps to use more efficient processes and improved on-time delivery by suppliers. Supplier relationship

management also requires that companies have contact with their suppliers by having frequent meetings, communicating their company policies, review of payment terms and also continuous improvement of their processes. Supply chain management as a best practice allows new supplier vetting and evaluation of existing suppliers to increase capacity and increase the supplier base.

Lean supply base enables organizations to audit their suppliers and review them prior to entering into partnerships. This will enhance level of trust and mutual understanding. Lean supply base through partnerships improves business processes and leads to improved products and reduction in costs and inventories. SRM empowers organizations with strategies to use procurement as an important tool in their supply chain services.

2.3.2 Customer Relationship Management

Customer relationship generally focuses on how best the organization manages the customer function to ensure they are responsive to their ever changing needs and wants. It includes ways of managing customer feedback, partnerships with them and improving customer service. Holmberg (2015) argued that personnel training, management support systems in place, open internal communication, and external communication involvement are needed for building customer relationships. An understanding of customers by management of a firm helps to better understand their customers' needs and wants. Bearnon (2014) intimated that improved relations with customers can improve demand analytics, which consequently helps in material and resource planning and operation efficiency. It will also lead to success in their overall SCM efforts.

A firm that maintains a strong network with its customers gains an advantage over its rivals by building a barrier to cushion them against competition. Customer relationship also involves prompt delivery products and services. Customer relationship mainly includes activities such as sharing information on product characteristic with customers, honoring reports for orders with customers during order booking and delivery times (Flynn & Flynn, 2005).

2.3.3 Information Sharing

This refers to the degree of how nonpublic information is disseminated to benefit parties along the supply chain (Moberg, 2002).Information serves to bridge the existing gaps in supply chains by ensuring that at all levels there is an information system that serves to disseminate crucial information on demand management, stock re-order levels, safety stock management and

material resource planning. Information sharing between firms and their supply chain members helps to maintain the correct stock level and minimize product shortage problems. On the other hand, sharing information about their operational activities may involve various channel members giving useful information on the amount of raw material delivery needs (Chen &Paulraj, 2010). The measure of the quality information is reflected in its usefulness, accuracy and accessibility; it is also reflected in its ability to be used to meet the needs of the organizations.

Multinational Manufacturing firms in Kenya rely on important information about the environment they operate in. Information is therefore important for them to re align their business with a favorable environment guided by information gathering, sharing and application in their businesses.

2.3.4 Logistics

Logistics are all operations in a supply chain concerned with the movement of inputs and finished goods through different operational levels within the organization. A good logistics strategy requires an end to end movement of inputs and final goods to the consumer in a timely manner. Organizations should embrace and invest in a good logistical framework that integrates well with the other supply chain activities in the supply chain. It therefore cuts across the entire business activities for the purpose of providing value to the customer/consumer (Alphonse, 2013). The development and application of this strategy requires that a concerted effort be used to strengthen relationships and facilitate the inclusion of all processes (Bearnon, 2014).

Chen and Paulraj (2010) proposed a model for future supply chain research that includes logistics as the best the link between supply chain structure and performance. Wisner (2003) demonstrated a positive link between logistics strategy and organizational performance. Cooper etal.,(2014) studied the relationship between logistics quality and the organizational performance of businesses in the retail sector. Logistics is key for any multinational manufacturing company because it will help it in managing its supply chain and improve interaction with its key stakeholders, customers and suppliers by ensuring a continuous flow of materials and information.

2.3.5 Outsourcing

Outsourcing is the transfer of the management of an organization’s functions to a third party provider for services that were previously performed in-house. Firms often decide to outsource some of their functions after an analysis of its core activities. Currently many organizations have

opted to outsource some of its services in order to improve efficiency of their current systems; they are also motivated by the desire to reduce overheads in order to focus on the mainstream business.

The benefits of outsourcing includes cost reduction, improved expertise, increased productivity and positive corporate image, more management focus on employee welfare, increased knowledge of new systems and procedures brought about by outsourcing companies. However the benefits of outsourcing can only be achieved if the right functions in the organization are contracted out to third parties (Supalak, 2010) .A Company's decision should therefore be guided by consultations between all participants including top management, staff and also the service providers. In their effort to outsource firms need to guard against losing out control of their loyal customers and supplier confidence. There is need for balance and continuous audit of this practice

2.4 Operational Performance Measurement

Firm's performance explains how it ranks against preset metrics of its performance. Performance is measured in terms of how a particular request is handled, performed and how it is executed successfully using the required standard of doing it. It is the outcome of all of the organization's operations and strategies. It is therefore a measure of how and organization or individual organizational units meets the planned targets.

Most multinational manufacturing firms always aim at continuously improving their performance. These companies have instituted and applied different performance management tools to support their supply chain strategies. The task of continuous monitoring and evaluation of processes by organizations is increasingly becoming challenging. In practice the measure of the organizations strength can done using financial tools which may include the use of financial ratio analysis, benchmarking, variance analysis, use of statistical performance metrics or a mix of these methodologies

2.5 Empirical Literature Review on Operational Performance

The supply chain performance literature has witnessed both conceptual and empirical contributions; Growing complexity in today's supply chain operations and increasing competitiveness has led the firms to look for key performance indicators, the study attempts to explore the empirical contributions on supply chain performance so as to delve further with a view to find the existing gaps and future research opportunities.

Holmberg (2015) attempted to find how problems are a result of inadequate use of systems methodology to further understand the dynamism. The data was collected from six firms in the home furnishing business in Sweden to analyze its supply chain. This was complemented with extensive review of both management, quality and logistics functions. The study exhibited the presence of a weak relationship between strategy and actions; firms are still putting greater emphasis on financial measures ignoring other variables which cause opposition by some of its employees. Also it was extremely difficult to categorize firms within a supply chain on the basis of a systems thinking.

Lai *et al.* (2002) investigated performance in the field of transport logistics and attempted to develop a measurement instrument for the same. The study based its conceptual background on the SCOR model. Subsequently he came up with a tool for SCP in transport logistics. The outcome suggests that the measurement tool instrument is consistent and good for evaluating supply chain performance in transport logistics. The limitations of the study were: low response rate; one informant per company; hence there may be presence of response bias; the scale may not be applied to SCP measurement in any other sectors.

Chong, Chan, Ooi and Sim (2011) developed a management tool which identified the relationships between supply chain management practices, operational performance and innovation on the performance of 163 Malaysian manufacturing and service firms. The results showed that SCM practices have a direct bearing on organizational performance among these firms when measured against a structured model of performance. The findings also revealed that Malaysian firms applied supply chain practices in their operations which confirming that SCM practices are applied across industry.

Charan et al. (2008) aimed to determine the key variables for an effective supply chain performance measurement system (SCPMS) which organizations should emphasize, so as to improve their supply chain. An important finding of this modeling approach was that awareness was that the existence of a performance measurement system (PMS) in supply chain which is a very critical factor (enabler) of performance. Therefore top management should prioritize on improving the awareness of PMS by their workers and customers. They should also align this with their goals, Invest in the implementation of this practice and devise effective information systems.

Chia et al. (2009) tested the perception of senior supply chain managers on measurement using a balanced scorecard (BSC) model. The survey population for this study included organizations in logistics, manufacturing and retailing spread across Singapore, to determine the extent of

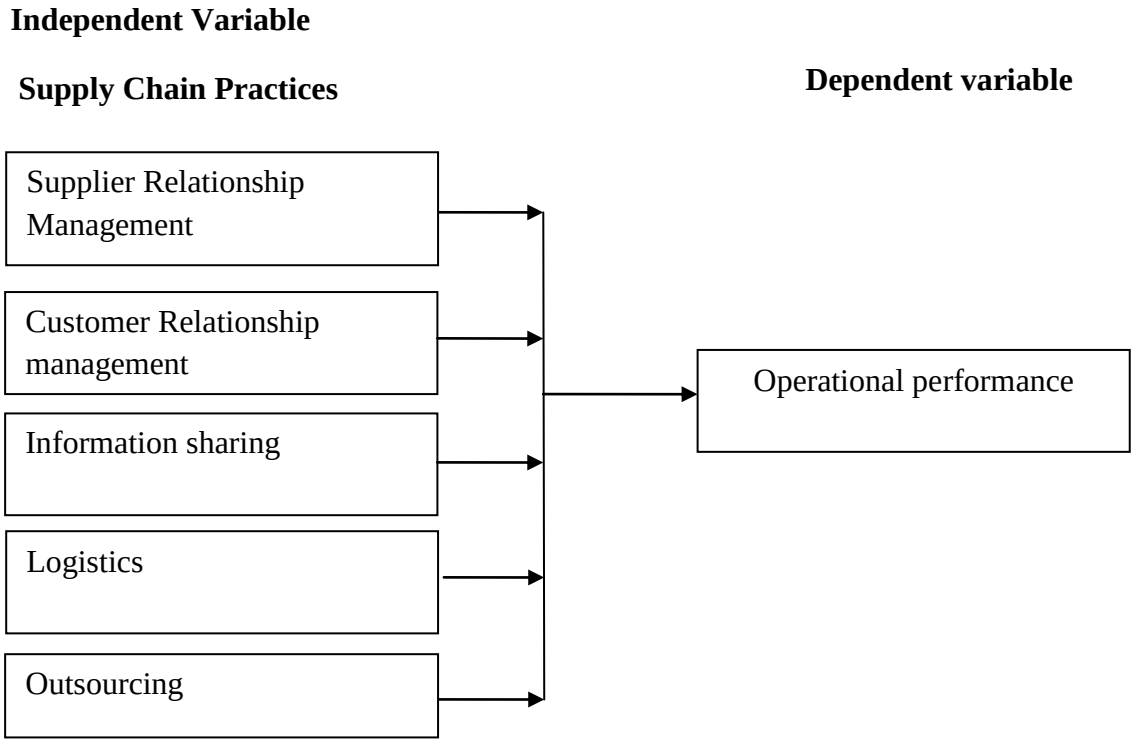
performance measurement as perceived and practiced by these different parties within the supply chain. The survey was designed from the parameters of BSC which include the following key drivers; financial, customer, internal business and innovation and learning .These findings clearly indicate that despite the increased awareness of the need for a balanced approach as an alternative measure of performance, firms are still dependent on existing traditional financial tools.

Awino and Gituro (2009) in their study of SCM practices for large private manufacturing firms in Kenya tested the applicability a statistical model (Kaiser Mayer-Olkin and Ballett's) on 52 large private manufacturing companies' using 39 variables to assess the extent of use among those firms. The variables were further analyzed using factor analysis procedure to achieve a simple and practical structure. From the study, 11 critical factors were identified as the best practices. These included the application of operating policies, linkages within supply chain firms, improved performance, improved information systems, strategic alliances, performance measures, goal orientation, customer relationships, guidelines and procedures, supplier selection and supplier evaluation. When compared against best practices globally, they showed some similarities.

Srinivasan *et al*. (2011) investigated the relationship between buyer and supplier partnership quality and supply chain performance with minimum risk of demand, supply and environmental uncertainty on this relationship. The findings indicate a positive relationship. The study also revealed that this positive relationship is moderated significantly by demand side risk and environmental uncertainty thereby highlighting the need for supply chain managers to form close relationships with their suppliers based on mutual trust and transparency as the same will enable to ward off the demand side risk and will also lead to better preparation for meeting any contingency arising from the environment.

2.6 Conceptual Framework

The framework adopted for this research shows that supplier relationship management, customer relationship management, information sharing, logistics and outsourcing influence operational performance.



Source: Researcher (2016)

Figure 2. 1: Conceptual Model

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodology that was used to carry out this research. It discusses the research design, target population, sampling design and sample size, data collection procedures and instruments as well as data analysis techniques.

3.2 Research Design

The study employed a descriptive survey design; the design was appropriate since it ensures that the data obtained give appropriate answers to the research questions. Kothari (2010) explains descriptive research as a situation or condition at hand, it is one in which information is collected without changing operating environment. The research design permitted the researcher to find out the effect of supply chain practices on the operational performance of multinational manufacturing firms in Kenya.

3.3 Population

The population comprised 45 multinational companies in the manufacturing operating in Kenya (See Appendix II) as identified by the Kenya Association of Manufacturers. The study adopted a census approach since the population is small.

3.4 Data Collection

Data from Supply chain Managers, Operations Managers and Marketing Officers from 45 multinational manufacturing firms in Nairobi was collected. They were considered appropriate since they understood better the SCM practices carried out in their organization.

A questionnaire was administered to the respondents. The Questionnaire was divided to three sections following the research objectives. Section A covered general information; Section B covered the supply chain management practices; Section C covered the relationship between SCM and operational performance. The research questions were both closed and open ended questions in a Likert's scale format. "Drop and pick later method" was used.

3.5 Data Analysis

Data collected was checked for consistency of responses and cleaned before entry into computer file. The data were analyzed using statistical methods and the results, displayed using tables. Statistical tools mainly frequencies, percentages, and mean were applied to summarize the responses. This were used to analyze objective (I) Supply chain management practices applied

by MNCs the Manufacturing sector The researcher also used correlation and multivariate linear regression analysis to establish the effect of SCM Practices on operational performance of multinational manufacturing firms.

The regression equation shall be of the form:

$Y = a + b1X1 + b2X2 + b3X3 + b4X4+b5X5+e$

Where: Y = Operational Performance;

a is the Y intercept when X is zero (constant)

b_1, b_2, b_3,b_4, b_5 are regression weights attached to the variables constants

X_1…..X_5 are the coefficients

X_1= Supplier Relationship Management (SRM);

X_2 = Customer Relationship Management (CRM);

X_3 = Information sharing;

X_4 = Logistics;

X_5 = Outsourcing

e is the error term

Summary of Data Collection and Analysis Methods

	Sections of the semi structure questionnaire	**Nature of Data**	**Data Analysis**
General Profile Company and Respondent	Section A	Primary Data	Descriptive Statistics
Objectives			
Objective 1: To identify the supply chain management practices Implemented by Multinational Manufacturing Firms in Kenya.	Section B	Primary Data	Descriptive Statistics
Objective 2: To establish the effect of supply chain management practices on the operational performance of Multinational Manufacturing firms in Kenya.	Section C	Primary Data	Regression Analysis and Correlation Analysis

Source: Researcher (2016)

Table 3.1: Summary of Data Collection and statistical analysis methods

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the data analysis results, interpretations and discussion of findings. The chapter is organized as follows: First it presents the response rate then the background information of the respondents. This is followed by analysis of supply chain practices that have been adopted by multinational manufacturing firms in Kenya and the effect of supply chain management practices on their operational performance .The chapter concludes with an analysis of the relationship between various supply chain practices and operational performance using regression analysis.

4.2 Response rate

The study targeted a sample of 45 respondents which are involved in large scale manufacturing in Kenya. This was displayed below.

Table 4. 1: Response Rate

	Targeted	Achieved	Percentage
Respondents	45	39	86.67%

Research Data (2016)

From Table 4.1, 39 out of the expected 45 respondents returned the questionnaires representing an 86.67% response rate which was considered a very high response rate and is representative of the targeted sample based previous statistical assertions (Mugenda and Mugenda, 2003).

4.3 General Information

This section outlines information about the respondents of the Multinational Manufacturing Companies for this research. The findings have been presented as follows:

4.3.1 Position in the Organization

The study sought to determine the position of the respondent in the organization to establish their suitability to give accurate and reliable information regarding the study objectives.

Table 4.2 Position in the Organization

Position in the Organization	Frequency	%
Supply chain Managers	25	64
Supply Chain Officers	14	36
Others	0	0
TOTAL	**39**	**100**

Research Data (2016)

The above results show that 64% of the respondents were senior procurement officers while the other 36% of the respondents were supply chain officers. The findings conclude that majority of the respondents were in a position to give reliable information with regard to supply chain management practices and how it contributes to organizational performance.

4.3.2 Length of service in current position

The study sought to find how long the respondents had served their organizations in their current positions. The responses were as shown in the Table 4.3.

Table 4. 3: Distribution of Respondents by length of service

	Frequency	Percent (%)
1-5 years	9	23.08
6-10 years	13	33.33
11-15 years	9	23.08
Over 16 years	8	20.51
Total	**39**	**100.0**

Research Data (2016)

From Table 4.3, most respondents (33.3%) had worked for between 6 and 10 years in their current positions while 23.08% had served for between 11 and 15 years and 20.51% had served for over 16 years. Thus 76.92% of the respondents had well over six years' experience in their present positions meaning they are competent to answer the questions.

4.3.3 Period when the Firm was established

The study sought to establish the period in which the MNCs have been in operation.

Table 4.4 Period when the MNC was established

PERIOD OF EXISTENCE	RESPONDENTS	PERCENTAGE
1-5 YRS	24	62%
OVER 10 YRS	15	38%
TOTAL	39	100%

Source: Research Data (2016)

The research findings, showed that 62% of the organizations have been operating for period of more than 10 years while 38% have been operating for less than 10 Years .This indicates that most of the organizations have been operating for a significant period of time indicates that they were qualified to give relevant information for this research

4.4 Extent of Supply Chain Management Practices Implementation

The study sought to establish the extent to which the organizations had implemented the supply chain practices .The summary statistics of the responses are provided in Table 4.5.

Table 4. 5: The level of Implementation of Supply chain practices

Supply Chain Management Practices	Mean	S.D
Customer Relationship Management	4.20	1.24
Supplier Relationship Management	4.10	1.21
Information Sharing	3.80	0.27
Logistics	3.70	0.13
Outsourcing	3.10	0.11

Research Data 2016

The results above indicate that Multinational Manufacturing Firms have adopted Customer relationship management to a great extent. This is reflected by mean of 4.20.The Multinational Companies use CRM to effectively manage customer complaints and also ensure long term relationship is maintained by their customers .This is to ensure that they improve customer

satisfaction .This concurs with the findings of Kaluki (2015) which indicate that Humanitarian Organizations use CRM to communicate with donors and supporters.

Supplier relationship management has also been implemented to a large extent with a mean of 4.1 showing that the multinationals embrace SRM to help in coordinating and planning of orders to vendors, to determine the payment terms and to agree on specifications required for its performance. This agrees with the findings of Arshinder,(2008) which indicated that coordinating operational activities through joint planning with suppliers result in removal of excessive inventory, reduction of lead times, improvement of customer service and increased revenues.

Information sharing has a mean of 3.8 indicating that information is shared between the various supply chain parties and the organizations which would enhance supply chain responsiveness to changing needs of end users. Sharing of information also helps manufacturing firms to reduce inventory mismanagement. The research agrees with Moberg (2006) study which revealed that information builds and strengthens relationships among information givers and receivers.

The research also found out that Logistics and Outsourcing are applied by MNCs in Kenya .Although the it was practiced to moderate extent shown by the mean of 3.7 organization recognize the contribution of logistics in their operational performance. These findings corroborate the findings of (Wisner, 2003) and Cooper, (2014) who revealed that a positive link existed between logistics strategy and organizational performance.

Outsourcing had a mean of 3.1 which showed that Multinational manufacturing organizations applied outsourcing. Outsourcing helps to reduce costs, increase capacity of service delivery and expertise and helping organizations refocus on key objectives. From the research findings however, it shows a lower appreciation of outsourcing by respondents. This contradicts the findings of Shalakha, (2015) which found that Oil Marketing companies applied Outsourcing to a large extent to benefit from modern technologies. These findings imply that manufacturing firms still a room for improvement to fully implement supply chain best practices.

4.5 Effect of Supply Chain Practices on operational Performance

The research sought to examine the relationship between various SC practices and operational performance. A multivariate linear regression was fitted to the data and the results displayed below.

Table 4. 6: Coefficients Estimates

	Coefficients	Std. Error	z	Sig
Constant	2.426	1.393	1.741	0.092
supplier relationship management (X1)	0.057	0.107	5.351	0.002
Customer relationship management (X2)	0.379	0.113	3.409	0.002
Information sharing (X3)	0.373	0.114	3.263	0.003
Logistics (X4)	0.381	0.083	4.586	0.000
Outsourcing (X5)	0.273	0.063	1.09	0.039

Research data (2016)

The resulting equation as per the SPSS generated output was as follows:

$$Y = 2.426 + 0.057 X1 + 0.379 X2 + 0.373 X3 + 0.38 X4 + 0.273 X5$$

Where: Y = Operational Performance; X1 = Supplier relationship management; X2 = Customer relationship management; X3 = Information sharing; X4 = Logistics and X5 = Outsourcing.

At 5% level of significance all the predictors are significant. This is reflected by the P values which are less than 5%. (X1: (b1 = .057; p = .002 > .05). X2: (b2 = .379; p = .002 > .05), X3: (b3 = .373; p = .003 <.05) X4: (b4 = .381; p = .000 <.05), X5: (b5 = .273; p = .039 < .05).)

From the above findings, all the SC practices were found to have statistically significant relationships with operational performance. The study findings are consistent with those of Mwilu (2013) where in his study he established that SC practices contributed to performance among public research firms in Kenya.

The table below shows the model summary

Table 4. 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.8157	0.6654	0.6432	0.124438

From the table above, the coefficient of determination was found to be 0.6654 indicating that SC practices account for 66.54% of the variability in operational performance. This represents a good fit since the rule of thumb has it that an R-square between 60% and 69% represents a good model.

The Study also tested the significance of the model through an analysis of variances (ANOVA) technique; this was to test whether the overall regression was a good fit for the data. The findings are tabulated below.

Table 4. 8: Analysis of Variance ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63.703	5	12.741	16.778	.000[a]
	Residual	0.449	33	0.013		
	Total	64.152	38			

At 5% significance level, the numerator critical value=2.50 at (5, 33) degrees of freedom. The calculated value was greater than critical value (16.778>2.50).This indicates that the overall model is statistically significant.

The P value is less than 5% (0.000< 5%) implying that supply chain practices have a statistically significant relationship with operational performance of multinational firms. These findings are consistent with Huang and Liu (2014) found that supply chain integration led to improved organizational performance of manufacturing firms in Beijing.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This is an analysis of data collected, discussions of findings, conclusions and recommendations based on the study conducted. The study sought to establish the supply chain management practices of multinational manufacturing firms in Kenya and to establish the effect of supply chain practices on their operational performance.

5.2 Summary of the Findings

It was established that most multinational manufacturing firms maintained a good relationship with its suppliers to ensure prompt delivery of orders and payment as per the agreed terms. They should therefore hold the suppliers accountable for delays in supplying goods and services agreed as per contract. They should organize frequent consultative meetings with them to address issues affecting delivery of goods and services. They should also reward vendors by ensuring that payments are done as agreed on their terms of payment.

The study established that long term relationships with customers improves customer satisfaction hence most multinational firms use CRM .They should invest in employee training, management support, personnel management to build customer relationship along their supply chains. Customer relationship also involves the ability of the firm to deliver the products and services at the right time, place, right amount and location. They should therefore build CRM to help them in demand forecasting and resource planning.

The study also showed that most multinational manufacturing firms were keen to ensure adequate flow of information organizations which would enhance supply chain agility by being responsive to changing needs of end users. It was also established that these firms also appreciated the role of logistics in ensuring that flow of goods and services along their supply chain. By having a good logistical infrastructure it has helped them manage demand uncertainties. The study also revealed that multinational should consider outsourcing some of its functions to help them reduce costs, expand services and expertise and helping organizations refocus on key objectives.

5.3 Conclusions

From the above findings, it was established that a considerable number of multinational manufacturing firms have embraced and adopted to large extent supply chain practices to improve their operational performance by maintaining long term supplier relations, they have instituted customer relationship management as a key tool for improving their engagement with customers. Other practices applied are use if an efficient IT system, logistics and outsourcing.

The study revealed that the adoption of supply chain practices by multinational manufacturing firms in Kenya has led to enhanced service delivery and decisions making which has enabled them to cope with changing business environment, It has also led to overall cost reduction by having efficient stock control measures and by outsourcing some of its services while focusing on its key areas,

5.4 Recommendations from the study

Supply chain management plays a critical role in the operations of many organizations. This is because it helps in improving its performance by coordinating resource flows among members in the upstream and downstream supply chain to create value. This study recommends that manufacturing firms should strengthen their supply chain management by putting greater effort to the implementation of some key best practices. This should be done by keeping all practices updated. Monitoring and further improvements for specific practices that showed a moderate extent of application should be done to ensure full adoption and appreciation of these practices. The supply chain managers should therefore focus more on involving staff and managers in the design, implementation and improvements of the SCM practices to improve service delivery.

5.5 Limitations of the Study and suggestions for further research

The researcher had an uphill task to convince the respondents to participate in the study. Most of the respondents were senior managers who were busy and had no time to respond to the questionnaires. This challenge was overcome by explaining the objectives of the study to the respondents who took time filling the questionnaires but they were received on time for compilation of these research .The findings of this study and application thereof are limited to MNC firms in the manufacturing sector in Kenya. It is therefore important to note that the findings of this study can only be used for comparative purposes.

The present study used MNC firms in the manufacturing sector in Kenya; future studies should consider expanding their scope to include other local firms that have their operations within Kenya only. The study also did not use quantitative measures of firm performance. It would be of interest to researchers to establish whether similar results can be obtained using quantitative measures such as profitability. The variables studied explained 66.54% of the variations in

operational performance of Multinational manufacturing firms (MNCs).The research recommends that other variables accounting for 33.46% need to be identified and their impact analyzed as well.

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APPENDICES

Appendix I: Questionnaire

You are requested to answer all questions in this research study questionnaire. The information provided shall be treated with confidentiality and will be used purposely for this study. This study aims at investigating the effect of supply chain management practices on the operational performance of Multinational Manufacturing firms in Kenya.

NB: Do not write your name on this questionnaire

Section A: General Information

1. What is your position in this organization? .....
2. When was your Organization Established? ……..
3. How long have you been in the current position?

   1-5 years [ ] 6-10 years [ ]

   11-15 years [ ] Over 16years [ ]

Section B: Supply Chain Management Practices

To what extent has your organization implemented the following Supply Chain Management practices in an effort to improve the operational performance in your organization? The scale below will be applicable: **1= very small extent 2= small extent 3= moderate extent 4= Large extent 5= to a very large extent.**

	Supply Relationship Management	**1**	**2**	**3**	**4**	**5**
1	The organization maintains a good relationship with its suppliers					
2	Suppliers have helped the Institution in preparation of specifications					
3	Suppliers provide goods prior to payment according to the agreed payment terms					
4	Meetings are frequently held between Management. and suppliers					
5	There is coordinating and joint planning between the organization and suppliers					

Any other? Please indicate

……

……

……

……

	Customer Relationship Management	**1**	**2**	**3**	**4**	**5**
1.	There is effective management of customer complaints					
2.	Customers have helped the Institution in preparation of specifications					
3.	Long term relationship with customers improves customer satisfaction.					
4.	Meetings are frequently held between customers and the firm's management					

Any other? Please indicate

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	Information Sharing	**1**	**2**	**3**	**4**	**5**
1.	There is efficient internal communication					
2.	There is adequacy of IT systems throughout the supply chain					
3.	Exchange of information between suppliers and the Institute is reliable					
4.	Data is shared between the organization and the suppliers to enhance productivity					
5.	There is an automated ordering system to major suppliers					

Any other? Please indicate

……

……

……

	Logistics	**1**	**2**	**3**	**4**	**5**
1.	Customers receive goods and services at the right quality, quantity, time& place,					
2.	There is Increased capacity to offer services to customers					
3.	There exists a vehicle maintenance policy					
4.	Surplus items are sold and there is reuse of recyclable materials/products					
5.	Services/products are distributed to customers					

Any other? Please indicate

……

……

	Outsourcing of Services	**1**	**2**	**3**	**4**	**5**
1.	There is improvement on service delivery					
2.	There is improvement in decision making					
3.	There is cost cutting due to outsourced services					
4.	Outsourced services are excellently performed					
5.	The supplier and customer meets regularly to discuss issues that relate to outsources services					

Any other? Please indicate

……

……

…….

Section C: Effect of Supply Chain Practices on the Operational performance

To what extent do you agree with the following statements regarding the effect of supply chain practices on the operational performance of your organization? The scale below will be applicable: **1= very small extent 2= small extent 3= moderate extent 4= Large extent 5= to a very large extent.**

	Operational Performance	**1**	**2**	**3**	**4**	**5**
1	Efficient supply chain practices have enhanced service delivery					
2	Supply chain practices have enhanced decision making process					
3	Supply chain practices have enhanced overall reduction in costs incurred					
4	Supply chain practices have led to improved levels of professionalism					
5	Supply chain practices have enhanced real time delivery of goods and services					
7	As a result of efficiency in Supply Chain practices customers' requirements are met in terms of quality					

Any other? Please indicate

……

……

……

……

Thank You for participating.

Appendix II: Multinational Manufacturing Companies in Kenya

1. Nestlé Foods
2. Procter and Gamble EA Ltd
3. Coca-Cola
4. Gillette
5. British American Tobacco
6. Unilever Kenya
7. General Motors East Africa
8. Bayer East Africa
9. Glaxo Smith Kline Kenya Ltd
10. Beta Healthcare International Limited
11. Chandaria Industries Limited
12. Orbit Chemicals Industries Limited
13. Bidco Oil Refineries
14. East African Portland Cement Company (EAPC)
15. Colgate Palmolive (EA) Ltd
16. East African Breweries Ltd
17. General Motors East Africa
18. Haco Industries
19. Kapa Oil Refineries
20. East African Packaging Industries
21. Tetra Pack
22. De la Rue Ltd United Currency
23. Kenya United Steel Ltd (KUSCO)
24. Bestfoods Kenya Ltd
25. Pwani Oil Refineries
26. Henkel Kenya Ltd
27. Bata Shoe Company (Kenya)
28. Henkel Kenya Limited
29. Gargil Kenya Limited
30. Topen Industries
31. Weltech Industries
32. Osho Chemical Industries
33. Palmac Oil Industries
34. Sona Holdings
35. Rolmil Kenya Limited
36. Associated Steel Company Limited.
37. Kenya United Steel Ltd (KUSCO)
38. Bamburi Cement
39. Associated Paper & Stationery Ltd
40. Total Kenya Limited-Lubes Blending plant
41. Atlas Copco Kenya Ltd
42. General Electric
43. Pan paper
44. Aluminum Africa Limited
45. Oil Libya Lube Blending

Source: KAM Directory 2015