LOGISTICS MANAGEMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE OF MANUFACTURING FIRMS IN NAIROBI COUNTY

BY:

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DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

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This Research project has been submitted for examination with my approval as the University supervisor

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DEDICATION

This project is dedicated to my family whom they have remained at my side and supported me throughout, sacrificing everything since the start of this journey.

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I wish to recognize my heartfelt gratefulness to my supervisors Mrs. Nancy Marika and Mr. Ernest Akello for their commitment, guidance and special attention in the development of this study.

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ABSTRACT

This study embraced descriptive plan and mainly grounded on purposes of determining the extent to which logistics management practices ought to be applied amid value adding firms in Nairobi county, secondly to ascertain the affiliation between study variables and supply chain performance of manufacturing firms within Nairobi county as well as the challenges which prevent the said firms from fully embracing supply chain practices as part of their daily operations. Due to the higher no of manufacturing firms in Nairobi, the researcher decided to sample population to arrive at 80 firms which was used for the study. The researcher distributed 80 questionnaires to the sampled firms and each firm was issued with one questionnaire to provide the data sought by the researcher. After data collection process was complete, researcher found out that out of the possible 80 respondents, he managed to get 46 questionnaires correctly filled and was therefore used for analysis in this study. Researcher used Statistical Package for Social Sciences (SPSS) to analyze data and the findings of the study presented through use of descriptive statistics to enable the beneficiaries easily interpret the findings. This was through use measures of central tendency and dispersion such as frequency tables, means and standard deviations to aid in interpretation and understanding. The discoveries from the study shown logistics management practices to have been embraced to a great extent by production firms within Nairobi county with order processing management, warehousing and inventory management respectively being the utmost effected with utmost means hence it was concluded that they need to be fully embraced to realize the benefits of logistics management practices. On the connection between independent and dependent variables, the outcomes of the study pointed out positive connections between logistics management practices and supply chain performance hence it was recommended that such firms entrusted with value addition of raw materials should strive further to embrace said practices for their own benefit such as reducing cost of production, enhancing flexibility and effectiveness as well as remaining competitive in the current turbulent environment. The study further found that manufacturing firms face numerous barriers as they try to embrace study variables to moderate extent. The most faced challenge was greater cost of embracement as well as lack of support and assurance from management and board members. The research concluded that value adding firms within Nairobi county need to embrace logistics management practices and ensure that top management support their strategic plans to ensure sufficient funds are allocated for implementation of logistics management practices. There is also need to train and familiarize employees at their respective firms to conceptualize the benefits associated with logistics management practices.

LIST OF TABLES AND FIGURES

ABREVIATIONS AND ACRONYMS

LM   Logistics management

LMP   Logistics management practices

SCOR   Supply chain operations reference model

ICT   Information Communication Technology

BSC   Balanced score card

KAM   Kenya Association of Manufacturers

RBT   Resource based theory

MDG   Millennium development goals

SCM   Supply Chain Management

SMES   Small and Medium Enterprises

GPRS   Global Positioning Systems

RFID   Radio frequency identification

GDP   Gross Domestic Product

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In current active and dynamic atmosphere, logistics management practices play a substantial portion in whole supply chain and administrative presentation by being the main factor of differentiation in the business logistics setup by ensuring charming stream of inputs, product and info through firms supply chains (Gunaseakaran and Ngail, 2003). Many manufacturing firms have recognized that supply Chain management through efficient logistics is crucial to creation of maintainable economical advantage for outputs in a progressively congested marketplace   (Tan, Lyman, & Wisner, 2002). Logistics management practices forms a crucial constituent of Supply Chain Management hence needs for incorporation together with various supply chain events such as client services, procurements, storage, inventory control, order dispensation and transportation to harvest on enhanced progression flows and reduced cost in supply chains (Harrison & Hoek, 2008).

 In logistical incorporation, diverse associates of equivalent supply chain work together to harmonize particular logistics events to increase ultimate buyer fulfillment through delivery of the right product to the right place within agreed period of time (Cooper, Lambert & Pagh, 1997).Melnyk et al. (2009) indicated that by adopting logistics management practices, firms are able to significantly reduce on logistical cost as well as offering competitive products to clients at lower prices thus logistics is seen as a strategic or value-creation tool. He further referred logistics as a noticeable action in firms, due to its importance in supply management, both within and outwardly. The managing of logistics practices actions has developed treasured technique of fortifying competitive benefit and enlightening supply chain presentation (Li et al., 2006).

Logistics management practices effects not only overall supply chain performance of a firm, but also competitive advantage of an organization, service quality, overall profitability, effectiveness and its external reputations (Karimi and Rafiee, 2014). Appropriate supply chain consists of a process incorporated with logistic function for purposes of reducing costs and increasing firm's competitiveness (Kumar *et al.*, 2006).

Top management and managers specifically have conventionally concentrated on bettering both organizational and supply chain enactment of manufacturing entities for which they are openly answerable with Supply chain Management requiring exterior attention from supply executives to deliberate the sway of supply chain approaches on supply chain associates. Every manufacturing entity needs to come up with adequate visionary plans which aid execution of LM practices and ensuring obtainability of correct produce in correct amount on the accurate location (Chopra & Meindl, 2004).

1.1.1 Logistics Management Practices

In the past decade, Logistics management had received much attention from entities especially manufacturing categories ,researchers and government due to realization of the importance of sustainability in logistics management being precarious for competitive benefit since supply chain performance had a constructive impression on company's financial performance (Tilokavichai, *et al.,* 2012). Logistics management practices refer to approaches which are considered most operative and useful means in attaining logistical objectives such as reduced cost, delivering on time to customers, increasing transport speed whereas creating optimum usage of firm's resources. These practices represent a set of useful solutions for logistics and transportation arena specifically logistical managers in every single manufacturing entity levels for accomplishment of their logistics management roles (Timna,2017).

Since logistics management practices consist of various logistics activities including customer service, orders processing, inventory management, transportation, storage, packaging and distribution directed at amassing logistical efficiency and effectiveness through timely delivery of inputs and outputs to the firm and customers respectively for sustained enormous information flow in organization. This could only be achieved by managing logistical performance through application of logistic management practices in order to ensure sustainability of the firm (Tilokavichai, *et al.,* 2012).

Robb et al. (2008) pointed logistics as a function dealing with physical movement, information and money flow administration, and is seen as a major factor of commercial performance, nonetheless best practices predominantly in aspects of performance

examination, are tranquil at phase of actuality deliberated by professionals and academics. Logistic practices encompasses planning and organizing activities intended for managing of fresh resources flow to completed outputs through firm for purposes of ensuring that inputs are sufficient and available for production process to be approved in effectual and operative style (Mellat-Parast and Spillan, 2014).

Logistics management practices should be integrated logistical activities such as activities connected with the purchasing of materials, handling, storing and movement (inbound) and actions connected with assortment, repairs and delivery of products to the ultimate buyer (outbound logistical) activities. The vision of the logistics management practices should be to ensure sustainable chain development, setting logistics events and procedures for purposes of getting ultimate outcomes with the tiniest probable level of harmonization, supreme collaboration and lowest overheads in accord with all conservational and customer regulations (Lambert and Burduroglo, 2000).

1.1.2 Supply Chain Performance

Simchi-Levi and Kaminsky (2003) define supply chain performance as operative superiority to distribute foremost client knowledge. On the other hand, Zhang and Okoroafo (2015) defined supply chain performance as firm's capability to lower cost of logistics by transporting correct products at the factual location at the accurate interval. Supply chain performance measurement is also demarcated overall set of measures used to estimate both the competence and capability of the supply chain (Kurien & Qureshi, 2011).

Performance measures of supply chain management for each sector are treated very differently and it is subjective to individual entities (Kleijnen & Smits, 2003). The supply chains Operations Reference Model(SCOR), balanced scorecard, and benchmarking are three methods that are used for Supply Chain performance measurements within the industry are is based on a number of distinct management processes including planning, sourcing, make decisions, deliver and return (Rolf, 2007). This model is perceived as a balanced system of performance measurement since it covers five important processes of

the supply chain namely; plans; sourcing; making; delivering; and returning (supply chain council, 2015)

Therefore for the rationale of this study, SCM performance measurement represents the practice of determining the efficiency of the whole supply chain from suppliers to consumers. Balanced scorecard (BSC) as recommended by Nortons and Kaplans (1996) can offer all-inclusive measurements systems for SCM performance by comprising 4 dissimilar viewpoints, namely: customer, financials, inner Business processes and learning and innovations. Moreover, BSC is in charge of monetary and non-monetary events and allows administration statements to emphasize on measures precisely designated to representation of organizations strategy (Arrowsmith, 2013)

Supply Chain performance is incidental to efficiency and effectiveness of the Supply Chains in delivering services to the end user. Many firms are concentrating on frequent improvement as a means of enhancing their core competitive advantage using Supply Chain Management. According to Lee and Billington (2012), discrete sites in any Supply Chain fail to increase efficiency and effectiveness if they pursue goals independently. All Supply Chain members should understand the measurements and offer minimum chances for manipulation (Schroeder, Anderson & Cleveland, 2010). In this respect, performance models and studies needs to be formulated for logistics objectives and attainment of such objectives can be rated to allow for the efficacy of techniques or strategies used to be easily accessed.

1.1.3 Manufacturing firms in Nairobi County

These are organizations where operations involve transformation of inputs such as raw materials into outputs that are finally delivered to the consumer and are under the umbrella of Kenya Association of Manufacturers which is their representative body for production value-added businesses in Kenya. Kenya Association of Manufacturers strives to ensuring manufacturing firms live up to its full potential through provision of undeviating mechanical support and training for development-minded production small and medium enterprises, always keeping them at their highest point operations always. Manufacturing economies are associated with long production and the interface of

manufacturing lines set up however with long runs outcomes in greater catalogue heights of some completed outputs and partial deliveries of others. The purpose of production sections in the concluded Vision 2030 strategy was to develop and open ways for new opportunities through creation of employment and wealth with segment's general objective in the millennium development goals (MDG) being to intensify its contributions to GDP by at least 11% per year during year period of 2013- 2017 as over the medium term period 2013 - 2017 as envisioned in Vision 2030 which is aimed at propelling nations into being Africa's manufacturing center.

The sector has a high potential of employment creation as seen to have grown from 261,700 in 2010 to 280,300 in 2013 with impetus for growth of other sectors such as the agriculture and also offers significant opportunities for export expansion. According to Bolo and Wainaina,(2009), firms are concentrating on being effective and agile in various operations of the firm techniques. Due to competition, organizations require diverse approaches for managing the movement of goods from the source to the end user. Though, in most cases they have proofed failure given the fact that they had laxity in formulating correct strategies needed to attain best practices in logistics management.

Kenya imports over 70% of the raw inputs required for manufacturing of outputs, the bulk of which consists of various raw materials. It is exceptionally difficult to procure high quality inputs and fraud is common. Although products and inputs standards have been defined, they need review procurement policies and ethical practices so as to ensure conformity to consumption requirements of Kenyan markets (KFIPR 2013).

1.2 Research Problem

In various developing economies exclusively in Asia, industrialized firm's forms economic evolution locomotive and has been recognized as main tradable segment in those economies (Tsai, 2004). Conversely Kenya's industrialized sectors has been enjoying a uncertain evolution charges be an average of 4 percent over the last ten years (KAM 2012). Under logistical supply chains, speed is of the essence hence the time from picking to delivery of outputs to customer's point of collection is very critical when it comes to quality customer service and satisfaction. It is the responsibility of logistic

managers manning supply chains to ensure that both inputs and outputs get to where they are required within the shortest time in order to satisfy customer's needs .The current competitive environment requires firms to integrate logistics management practices to their functions so as to remain competitive as well as ensure they manage their logistical cost and supply chain inefficiencies. (Timnah,2017)

As logistics management is progressively anticipated to add to supply chain performance, numerous studies have scrutinized the impact of logistics recital processes and logistics administration practices on general firm enactments. For instance, Koh et al. (2007) did a study on the connections existing amongst logistics practices and functioning business performances by sampling all SMEs manufacturing metals products and equipment's in Turkey. The study concluded amid various challenges encountered that subcontracting and premeditated partnership practices does not have uninterrupted bearing on administrative performance, but then can obligate straight impact on SMEs' operative performance.

In various studies done, it is evident that enormous work on the connection amongst logistic practices and supply chain performance. Larson et al. (2007) conducted a study on impression of awareness of logistics performance on business results and their findings showed substantial number of manager's responses. Timna (2017) carried a study on impacts of logistics and transportation management practices on performance of Kenya Cooperative Creameries and found out that the study variables had a constructive consequence on performance.

Green et al. (2008) addressed the association amongst logistic best practices and administrative performance in big businesses in the United States and resolved that logistics practice has optimistic influence on firm performance specifically in delivery speed, responsiveness and agility of delivery hence affecting on marketing performance comprising of leverage consequence on average sales progression and trade effectiveness.

Roth et al. (2008) examined the backgrounds and performance outcomes of prominent international corporations, making conclusions that logistics management or logistical information technologies leads to improved sales and profitability. Chow et al. (1994) focused on scrutinizing the correlation amongst goals, practices and administration of

performance in the supply chain. The study established that logistics management practices effect logistics competences positively in aspects of quality and services offered.

Despite the attempts by many researchers to establish the linkage between logistic management and performance, no empirical studies have been done investigating the logistics management practices and supply chain performance of manufacturing firms in Nairobi, Kenya. This therefore creates a gap in literature that such study pursues to fill by addressing the following questions: What are logistic management practices among manufacturing firms? What are the relationships between logistic management practices and supply chain performance? What are the challenges experienced by manufacturing firms?

1.3 Research Objectives

The study objectives will be to;

i. To establish logistics management practices among manufacturing firms in Nairobi

ii.   To determine the relationships between logistics management practices and supply chain performance of manufacturing firms in Nairobi

iii. To determine the challenges faced by manufacturing firms in Nairobi in adoption of logistic management practices

1.4 Value of the Study

The outcomes of this research will be beneficial to supply chain managers in evaluation of their supply and logistical networks effectiveness and other related sectors as well. To be specific, the findings will be of benefit to the management of all manufacturing or logistics firms, governments, stakeholders, researchers and scholars. Manufacturing and logistics sectors will be able to substantiate more on existing relationships between logistic management practices and performance hence will strive adopting such practices for purposes of improving on their productivity, profitability, reducing on cost as well as

opening doors to improvements of supply chain performance through the help of best logistical practices.

Government on the other hand will rely on the findings in coming up with new legal frameworks and policies aimed at ensuring firms have condusive environment to be able to adopt and implement such practices given the crucial contribution of manufacturing firms to Kenyan economy. Shareholders will benefit on the importance of logistic management practices and their impact on supply chain performance hence will aid them in accepting and helping in its implementation process as well as monitoring of the same. The study will help future scholars and academicians through contributing to current body of knowledge and providing literature to scholars in the field of manufacturing by being reference document for forthcoming researchers and scholars on the interrelated themes.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The part reviews work of several researchers relevant to study. It reviews opinions, observations attributes and conclusions from various researchers which offer useful material in support of the study. The study will advance understanding of the logistics management practices with reference to manufacturing firms in Nairobi, Kenya

2.2 Theoretical Foundation

There is a growing and significant interest over logistics management practices and SC performance by the supply chain management academia and researchers in recent years. Various theories have been developed which describe the consequence of logistics management practices on supply chain management performance of manufacturing firms in Nairobi.

2.2.1 Resource Based Theory

The Resource Based Theory (RBT) put more emphasis on inner competencies and weakness in institutional resources, showing how procedures are controlled and the way resources are apportioned and arrayed for purposes of execution of various strategies (Wernerfelt,2004 & Barney, 2003). According to Montgomery (2004) the resource-based standpoint therefore meaning existence of convinced focus on resources owned by firms or by its companions and the various properties that can enlighten company supply chain performance, long term development or weakening. The resource based viewpoint intents to give a blueprint of company resources before and throughout decision-making processes and business strategies in the company (Montgomery, 2004).

According to Barney (2003), in order to successfully implement logistics management practices resources have to be strategic. The resource based viewpoint in a contemporary outlook includes a company's elements such as structure, communication within a supply chain players trying to coordinate info disseminated among them and assurance of the key actors in an firm management in order to fully ensure proper logistics management practices implementation (Barney, 2003). The effectiveness of firm best practices

depends on the utilization and exploitation of existing resources to the extent that firms have pools of under used resources, these create unique, firm-specific opportunities for exploitation (Montgomery, 2004). This philosophy is applicable to this study as it looks at management of resources that manufacturing firms has in order to improve product delivery or the movement of fresh inputs and finished outputs from the firm to customers point of collection.

2.2.2 Transaction Cost Theory

Transaction cost economics is a crucial concept in the ground of strategy (Stephen & Helen, 2011) and it was developed by Oliver Williamson who was an economist. This model answers queries about why manufacturing entities exist (i.e., to minimize logistics costs), how entities describe their borders, and how they should to administer processes. Based on Lozano and Valles (2013), TCE was initially established to aid regulate the proficiency in manufacturing goods and at lower charge to guarantee low prices to clients (Sirmon, Hitt & Ireland, 2007).

Manufacturing firms have to offer correct quality of goods and reward to the bidder posing the lowest price. In logistic management, Transaction cost economics theory will apply in manufacturing logistics total cost ownership concept which includes the purchase cost, maintenance cost, warehousing cost, transportation cost, service cost and processing cost. Manufacturing firms will incur this cost by shipment of materials from upstream level to the final customer and therefore logistics manager must carefully evaluate the tradeoff between these costs because all these will either increase or reduce logistics cost. Also there is need to coordinate all the activities involved in getting the product to the firm so as to ensure that the integrated effort of logistics is achieved .This theory is very crucial in managing logistics organizations especially the cost associated with logistics operations because it affects the level of customer satisfaction and may even change customer perceptions and loyalty to the firm (Walker and Brammer, 2009)

2.3 Logistics Management Practices

Logistics management practices consist of actions considered as world-class and most operational and theoretical means of attaining logistical goals. These practices represent a

set of useful solutions for logistics and transportation arena specifically logistical managers in every single manufacturing entity levels for accomplishment of their logistics management roles (Timna 2017). Sople (2010) argued that in supreme contemporary businesses, the notion of logistical practices is grounded on systems methodology due to the fact that the movement of supplies from suppliers to a production plants. This study will be based on five dimensions of logistics management practices having potential impact on supply chain performance. This includes, transport management, use of ICT, reverse logistics, warehousing & inventory management and order process management.

2.3.1 Transportation Management

Kenyon & Meixell, 2011) defined transportation management as overseeing of events engaged in distributing any products from vendors to the firm, warehouses or customer's point of collection. Murphy (2008) pointed out that transportation management for a huge part of firm cost of production hence if firms want to have competitive edge over others,then they must ensure that their cost of logistics or moving materials and products to customers point of collection is minimized of any firm supply chain. This is usually done by use of various modes of transport depending on factors such as transportation loads, delivery points and distribution centers (Laird, 2012).

According to Chopra and Meindl (2007), a transporter creates speculation choices concerning the conveyance equipment's and in certain circumstances arrangements need to be done to make functioning decision capitalize on the yield from assets. Transportation management occupies majority of the amount in the logistical costs henceforth transportation management influence the performance of manufacturing firms and their respective logistics system immensely because movement of products is necessary in the whole manufacturing processes, since industrializing to distribution to the ultimate customers and returns (Bowersox*, et al*., 2010).Therefore a perfect management and coordination between firms supply chain components leads or bring the maximum benefits with worthy transportation management being able to provide improved logistics efficiency, reduced operation cost as well as promoting service quality on firms (Sople, 2010)

2.3.2 Use of Technology

Daugherty (1995) pointed out the benefits of information technologies in enabling firms attain diverse competitive edge due to its ability to centralize and disseminate information or data needed in formulation and implementation of strategic planning. Firms use modern technologies in various logistical processes so as to gain more visibility of their entire distribution networks and to track the movement of various inventories, trucks and identification of lots as well as seamlessly linking both supply chain upstream and downstream levels (Shi et al.2011).

The adoption of information technology in logistics management such RFID, GPRS, wireless networks and sensors have enabled manufacturing firms have accurate information through real-time tracking of trucks on transit hence firms have been able to reduce cost associated with such transit or late deliveries resulting to unmonitored movements and inventories (Bardaki, & Pramatari, 2011). In the automation, computerization has a vibrant responsibility in firm manufacturing process maximization with technology considered for playing a main part in enhancing the effectiveness of a firm through use of various technologies such as Global positioning network and vehicle trucking devices or prized software's which can be implemented throughout logistical process (Zhang,Goh, & Meng ,2011).

For instance, business process software can be integrated to provide appropriate notifications concerning movement of products and firms logistics machinist and customer will benefit by receiving information concerning the nature of products being moved from vendors or manufacturers, purchase quality and quantity and lastly transportation of finished outputs to the destination which saves a significant aggregate time due to the fact that manual interference is abolished (Chang & Lee 2007). Furthermore, exact trailing aid in enlightening general process management hence the logistics function of a firm should enforce technologies for bettering production (Fasanghari *et al.*, 2008).

2.3.3 Reverse Logistics

Reverse logistics has been instituted as the process of incorporating environment conservation through better disposal of products earlier sold to the customers for objective of repossessing value or proper disposal. It forms logistical movement which corresponds to green advertising including sales returns, source reductions, recycling's, material substitutions, reuse of resources, surplus disposals, and revamping and restoration (Barney, 2001). Conversely, due to more emphasis awarded to environmental conservation on recent past for purposes on reducing on pollution and conserving environment, more countries have enacted bills to promoted or ensure manufacturing firms incorporate reverse logistics in their production processes to ensure care is taken to products consumed by their (Allan et. al., 2006).

Conventionally, in firm supply chain there exist smoothness flow ofproducts from manufacturers to the end users with all attention being majorly focused on inbound and outbound logistics actions and as soon as the same products are vended and transported to customers point of collection, the manufacturers develops impression that their responsibility comes to an end due to believe that their accountability is restricted to the extent of replacement of substandard merchandises enclosed by warrant or those spoiled throughout transportation (Timnah,2017). Due to the need to fully satisfy customers and ensure clean environment, manufacturers have embraced reverse logistics to address used supplies, wrapping surplus, throwaway wastes produced by end products delivered to customer's point of collection (Sople, 2010).

2.3.4 Warehousing & Inventory Management

Alberto (2000) pointed out that warehousing represent significant practice in firms logistical network due to its responsibility of storing products such as inputs and outputs awaiting to be used in production or to be shipped or delivered to customers respectively. Murphy (2008) pointed out that manufacturing firms can have their warehousing function provided by either warehouses or distribution centers and an vital choice for several companies is standards for pinpointing warehousing amenities because cost issues are widespread firm decision determination process with capital capabilities such as experienced labor, approachability, significance substructure and obtainability of

conveyance approaches are also emphasized in some of the models, interval and dependability associated deliberations including nearness of clients production amenities and providers (Siran, 2017).

Inventory control represents strategic part of logistical operations with bearing on overall logistical efficiency and supply chain effectiveness. Whereas buffer inventory offer some protection against variations in customers' demands levels, there is anxiety of reducing ability of firms supply chains to respond to variations on customers' needs thus affecting firm supply chain performance. Inventories on universal supply chain can consequently remain as a buffer counter to peril whereas raising other type of risks and other factors including swiftness to markets for firsthand produces, receptiveness towards market niches, and response interval for eminence issues (Etienne (2005). Harrison and Hoek (2008) indicated that some stock reduction approaches including lessening of fabrication lead periods, products rescheduling, Total sequence times and simulated warehousing theory.

2.3.5 Order Process Management

Christopher (2010), defined order processing as a logistic management practice which forms the foundation for info and data flow in a manufacturing firm's logistical networks and is always for recognizing combined responsibilities related to satisfying orders for products or services ordered by customers. This practice has three chief functions that make smooth dissemination of information that precedes products, together with the significance of precise information in achievement of superior firms supply chain and logistical performance traditionally been underappreciated (Bowersox, *et al*., 2010)

Although several features of information are crucial to logistics operations, dispensation of customers request is magnified as primal importance hence failing to comprehensively understand its value will results from lack of knowledge of understanding on how misrepresentation and functioning catastrophes in order servicing influence operations of manufacturing firms particularly on their logistical networks. Order processing is usually used to recognize combined responsibilities linked to satisfying order for products or services requested by customers (Stevenson, 2009). In supreme firms supply chains, customers' wants are diffused in the form of orders and dispensation of their orders

requiring all aspects of managing customer requirements, comprising original orders receipts, deliveries, invoice, and collections (Pfohl, 2004).

2.4 Logistics Management Practices and Supply Chain Performance

Logistics is always involved with efficiency in integration of all materials along firm supply chain from the original start point of manufacturing to final destination point of goods or customers points of collections (Ozovaci, 2016).The benefits that logistics management practices brings to the firm has been growing and being recognized in both small and large manufacturing firms because due to logistics, existing production and management practices are improved without the necessity to get any additional resources hence this practices are paramount to any manufacturing entity given that they need to ensure their finished goods are delivered to customers point of collection through firm logistics function which promotes supply chain performance through efficiency ,cost reduction and competitiveness(Kahia,2014).

The adoption of information technologies in logistics management provides real-time tracing data on transiting trucks such that logistics companies can improve their logistics management through improved accuracy in delivery and tracking ability (Bardaki, & Pramatari, 2011).Therefore a perfect management and coordination between firms supply chain components would take the significance of logistics to better level with worthy transport management being able to provide improved logistics efficiency, reduced operation cost as well as promoting service quality on firms (Sople, 2010).

The main upcoming trend triggering firms to adopt logistic management practices is the need to manage logistical cost and emphasis on execution of excellence in the general firm supply chain network which in the long run increases firm profitability and sales(NSDC,2010).Therefore from the existing literature, it is quite critical that firms should focus on embracing logistic management practices to save firms lot in terms of cost and lose of valuable resources hence positively influencing their supply chain performance(Green, Roberts & wininger,2008). In utmost firms supply chains, customers' necessities are diffused in terms of orders and dispensation of their orders requiring all features of handling client necessities, comprising original order receipts, deliveries, invoice, and collections. The more quickly an order is communicated, arrived

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and administered, the more period administration for arrangement transport and stock activities while meeting the requisite client services level (Pfohl, 2004).
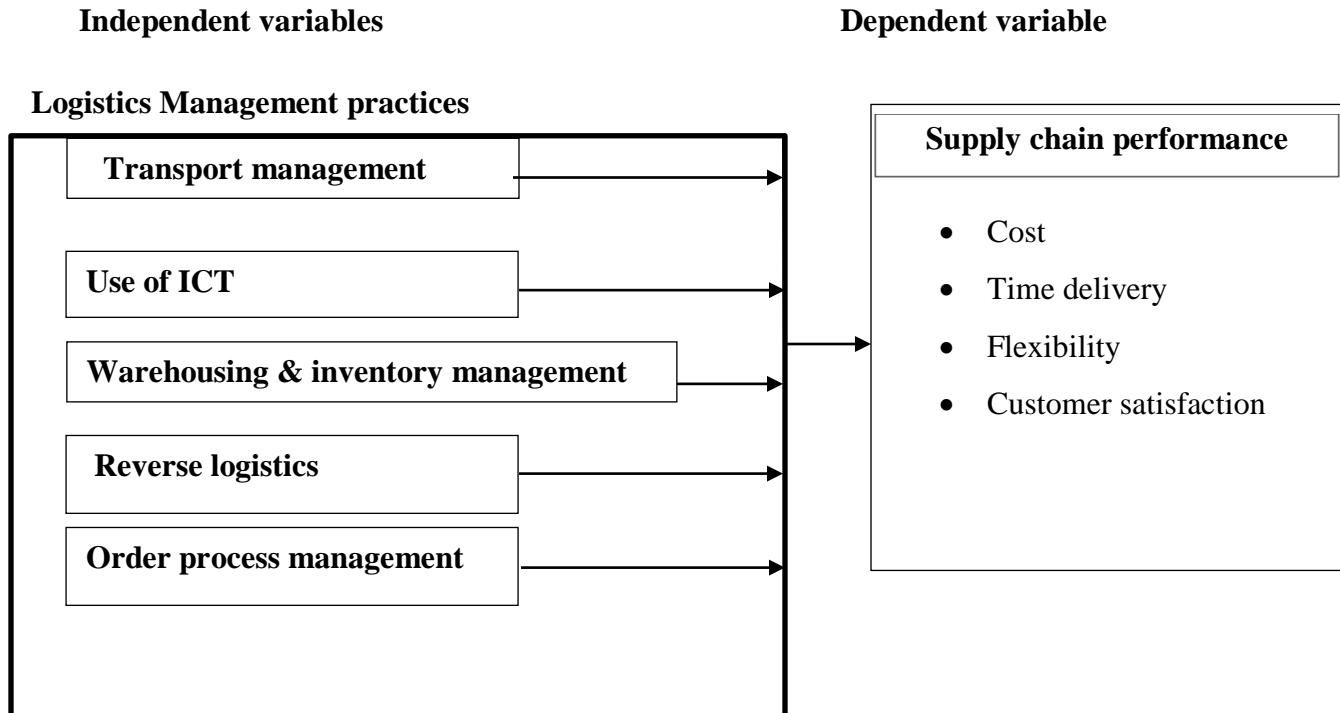
2.5 Challenges faced in implementation of logistics management practices

Operative logistics management depends mostly on clearly understanding on the business logistical processes adopted by a given firm which is usually seen as hectic process due to the fact that it requires huge budgets to be set aside in addition to long periods of time needed in order to organize and plan for processes that must work together (McCormick, 2001) .McCormick (2001) also noted that bigger manufacturing firms were constituted by several manufacturing units and attainments generated across sphere with longer times needed to be invested for manufacturing firms to fully assimilate their logistical networks into a unified chain capable of reducing firms cost as well as enhancing efficiency of higher attitude. Previous studies such as of (Kiplagat, 2017) emphasized on the need for firms to fully seek having knowledge of the type of personnel needed and how they should work together not forgetting the nature of information which should be shared for purposes of making decisions on technologies which can work and support such exchanges as well as the preeminent approach on how to unite them (Kiplagat, 2017)

Manufacturing firms supply chains are usually pressed due to its incapability to get sufficient resources generally scuffle to treasure assets to allow them attain obligatory technological structures. Personnel matters also forms part challenges being faced given that people employed may over-inflate forecasts or distort stock information's which normally affect logistics management given that management may decide to halt their budget (McCormick, 2001).The inner processes of industrialized entities stands a basis crucial in formation of an progressive supply chain performance and consequently need to be deliberated afore exterior harmonization is boarded on. The agility of the inner procedures in responding to market variations is crucial pursuit to improve competitive gain over rivals. Supply chain management safeguards that buyer wants are integrated throughout the process of manufacturing, and that there is agility to accommodate variations as they occur. This guarantees no compromise is done in bulk customization and thus client receptiveness is enhanced (Lambert & Cooper, 2000).

2.6 Conceptual Framework

The framework below represents connection between self-determining variables and dependent variables of the research study. The figure below shows how independent and dependent variables relate to each other. The key goal of the study is to establish the affiliation amongst logistics management practices and supply chain management performance of manufacturing firms in Nairobi, Kenya.

Independent variables   **Dependent variable**

Logistics Management practices

Supply chain performance
• Cost
• Time delivery
• Flexibility
• Customer satisfaction

Source: Researcher (2018)

Figure 2.1: Conceptual Model

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section focuses on research approach utilized in completing the research study. It is organized into the following research structure; research design, target population, data collection approach and the data Analysis section.

3.2 Research Design

The research study made use of descriptive research design in trying to seek answers to the research question. The design was preferred for the reason that it enabled the researcher to describe the context area of research, institute the relationship and explain the collected data with aim of establishing the differences and similarities within a given time frame. According to Ghauri & Gronhaug (2005), research design entails coming up with a specified plan or a specified data collection framework and the successive statistical analysis, which contains the research approach and the objectives which are of much concern to the researcher. Therefore, such methodology was seen suitable for study, given researcher's intentions to gather comprehensive facts through descriptions and was also useful for pinpointing variables and theoretical constructs.

3.3 Target Population

The population of this research study consisted of all manufacturing firms in Nairobi Kenya comprising of about 160 members in Nairobi. According to KAM directory 2016, 80 percent of its members are based in Nairobi mainly in the industrial area with only a few spread all over Nairobi and its surrounding areas (www.kam.co.ke).

3.4 Sampling Design

The study used stratified proportionate sampling where researcher divided the entire population into 10 different subgroups or strata, then randomly selects the 8 final subjects proportionally from the different strata. The study used stratified random sampling technique to select a sample of 80 respondents from a target population of 160 firms. According to Mugenda and Mugenda (2003), a sample of 20% is considered representative for a population less 500. The two functional departments of the

manufacturing firms were treated as strata after which simple random sampling was done proportionate to the number of respondents in each stratum.

3.5 Data Collection

The study employed primary data in seeking answers to the research question. The data was collected using structured questionnaires. The instrument captures data pertinent to respondents' demographics and more importantly, it is structured in such a way that it facilitates collection of data on all study variables. According to Kothari (2004), a questionnaire administered by self is merely way of eliciting self-report on publics' outlook, attitudes, opinions and principles. The questionnaire contained both open ended and closed ended questions in order to gather views, opinions and attitude from the respondent. The open ended questions will be used because they give unlimited liberty of answers to respondents. Questionnaire will be overseen through drop and pick technique to executive managers or equivalents of manufacturing firms in Nairobi.

3.6 Data Analysis

The data collected was analyzed using descriptive and inferential statistics. Descriptive statistics entails the use of measures of central tendency like the mean, frequencies, percentages and standard deviation. Inferential statistics on the other hand was used to draw conclusions. Multiple regression analysis was used in this case in order to determine the relationship between independent and dependent variables. The following regression model shall was used:

$$Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + \acute{\varepsilon}$$

 Whereby Y =Supply chain performance

a= Constant

X_1 = Transportation Management

X_2 = use of technology

X_3= Reverse logistics

X_4 = warehousing and inventory management

X_5 = Order processing management

Έ = error term

B_1, B_2, B_3 and B_4 represent regression coefficients. These help in the generalization of the findings on the relationship between logistics management practices and supply chain performance of manufacturing firms in Nairobi.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section covers the presentation, interpretation and discussions of the findings. The purpose of this study was to establish the extent of implementation of logistics management practices by production firms in within Nairobi county, to determine the relationship between logistics management practices and supply chain performance of manufacturing firms in Nairobi and to find out challenges faced by manufacturing firms in Nairobi during implementation of logistics management practices.

4.2 Response Rate

The target sampled population of this study was 80 manufacturing firms in within Nairobi County. Researcher issued 80 questionnaires to each firm to be filled by the most available and convenient person and 46 responses were obtained giving a response rate of 57.5%. The study failed to attain a 100 per cent response rate since some of the questionnaires were not completely filled and others had some varying information. However, Kothari (2004) point out that a 50% and above response rate is satisfactory for investigation and creating interpretations and hence this gave the researcher a go ahead with the data analysis.

4.3 General Information

The general information comprised of the gender, age bracket, level of education and work experience of the respondents in various manufacturing firms sampled.

4.3.1 Education level

Researcher wanted to find out the level of education for all the respondents involved in data collection and therefore on biographic information section, they were asked to indicate their education level.

The table below represents the findings of the study.

Table 4.1 Education Level distribution

Education level	Frequency	Percent
College level	7	15.2
University Degree	23	50.0
Masters level	16	34.8
Total	46	100.0

Source: SPSS Output (2018)

From the findings it was ascertained that 15.2% of the respondents were college level holders, 50 % of the respondents were university degree holders and 34.8% of the respondents were master's holders. From these findings it was concluded that all the respondents had pertinent education upbringing and their answers could be used sufficiently for the study since they all had satisfactory knowledge on the information sought on logistics management practices.

4.3.2 Gender

The respondents were asked to indicate their gender and the table below represents the findings.

Table 4.2 Gender Distribution

	Frequency	Percent
Males	27	58.7
Females	19	41.3
Total	46	100.0

Source: SPSS Output (2018)

In regard to the gender of respondents, the researcher found out that 58.7% of the respondents represented male counterparts while females being represented by the remaining 41.3%.This findings indicates that's their if gender balance of employees working on sampled manufacturing firms with males respondents slightly higher by 17% than females.

4.3.3 Experience

The respondents were asked to indicate the years of experience that they had worked in manufacturing firms. The table below represents the findings of their responses.

Table 4.3 Work Experience Distribution

Experience	Frequency	Percent
Between 1-5 years	6	13
Between 6-10 years	16	34.8
Between 11-15years	13	28.3
Between 16-20years	9	19.6
Above 20years	2	4.3
Total	46	100.0

Source: SPSS Output (2018)

The findings above indicate that majority of the respondents (34.8%) had a work experience between 6-10 years, 28.3% of the respondents were aged between 11-15 years, 19.6% of the respondents were aged between 16-20 years, 13% of the respondents had experience between 1-5 years and 4.3% of the respondents had over 20 years work experience forming minority of the respondents. From these findings it indicates that most of the respondents had adverse experience in their work organizations in the field and had knowledge on the data sough on logistics management and supply chain performance.

4.3.4 Age Bracket

The respondents were asked to indicate their age bracket and the responses are as indicated below;

Table 4.4 Age Bracket Distribution

Age bracket	Frequency	Percent
20-25yrs	3	6.5
26-30yrs	16	34.8
31-35	23	50.0
above 40yrs	4	8.7
Total	46	100.0

From the findings, majority (50%) of the respondents was aged between 31-35 years followed those aged between 26-30yrs with 34.8% and above 40 years with percentage of 8.7%.those between 20-25 years was the least represented with a percentage of 6.5.This findings indicates that manufacturing firms in Nairobi consist of respondents who are above 26 years and therefore mature and able to provide answers to sought questions.

4.4 Logistics Management Practices adopted by manufacturing firms in Nairobi

The first objective of this study was to identify the various logistics management practices adopted by manufacturing firms in Nairobi. To ascertain this, descriptive statistics was used. The respondents were asked to indicate the extent to which the various logistics management practices have been implemented in manufacturing firms in Nairobi firms.

The findings below indicated that order processing management had a mean of 4.4348, warehousing and inventory management had a mean of 4.3478, Transportation Management had a mean of 4.2174, use of technology had a mean of 4.00 and reverse logistics last with a mean of 3.8261 .From this findings, it was concluded that to a great extent, order processing management, warehousing and inventory management, transportation management and use of technology as a logistics management practice had

been implemented in manufacturing firms in Nairobi. However reverse logistics has been implemented to a moderate extent as compared to other logistics management practices

Table 4.5 Logistics Management Practices Descriptive Statistics

Logistics Management Practices	Mean	Std. Deviation
Order processing management	4.4348	.62011
warehousing and inventory management	4.3478	.70608
Transportation Management	4.2174	.86700
use of technology	4.0000	.86923
Reverse logistics	3.8261	.87697

Source: SPSS Output (2018)

4.5 Logistics Management Practices and Supply Chain Performance

The second objective of the study was to establish relationship between logistics management practices and supply chain performance. The study used regression analysis to determine the association between the independent variables (Transportation management, use of technology, warehousing and inventory management, reverse logistics and order processing management) and the dependent variable (supply chain performance) to illustrate the anticipated relationship between variables and the findings are as illustrated below,

Table 4.6 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729[a]	.531	.473	.36393

Source: SPSS output (2018)

a. Predictors: (Constant), Order processing management, Transportation Management, Reverse logistics , warehousing and inventory management, use of technology

The R-squared shows the variation in the dependent variable that can be explained by the independent variables being studied. The R-squared in this study was 0.531, which implies that the all independent variables can explicate 53.1% of the dependent variable whereas the remaining 46.9% variation is explained by other factors which are not included in the model.

The Analysis of variance was carried out and the findings are as indicated in the table below:

Table 4.7 Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.006	5	1.201	9.070	.000[b]
Residual	5.298	40	.132		
Total	11.304	45			

Source: SPSS output (2018)

a. Dependent Variable: Supply chain performance

b. Predictors: (Constant), Order processing management, Transportation Management, Reverse logistics , warehousing and inventory management, use of technology

Analysis of variance was carried out on the regression model and the results are as presented in Table 4.7 above. The findings above show that the F-critical (9.070), which shows that the model can be used in predicting the influence of the independent variables on the dependent variable. The results on the analysis of the variance (ANOVA) indicate that the overall model was statistically significant at 95% confidence level.

Researcher further wanted to find out specific effect of study variables on supply chain performance of manufacturing firms in Nairobi and to execute this, regression coefficients was used to show how each variable influence supply chain performance. The table below (4.8) represents the regression analysis carried out on the logistics management practices and supply chain performance as indicated below:

Table 4.8 Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.445	.897		1.611	.115
Transportation Management	.384	.122	.447	3.146	.003
Use of technology	.883	.149	.890	5.947	.000
Reverse logistics	.020	.096	.023	.206	.838
Warehousing and inventory management	.076	.096	.094	.792	.433
Order processing management	.259	.093	.325	2.784	.008

Source: SPSS output (2018)

The model shows that when entire variables are held at zero (constant), the worth of supply chain performance would be at 1.445. Additionally, Transportation Management had a positive influence on the supply chain performance of manufacturing firms in Kenya (β_1=0.447, p-value=0.003). This implies that increase in the utilization of Transportation Management would lead to a 0.447 increase in supply chain performance of manufacturing firms in Nairobi. The results also show that use of technology has a positive influence on the supply chain performance of manufacturing firms in Nairobi (β_2=0. 890, p-value=0.000). This implies that a unit increase in the utilization of use of technology would lead to a 0.890 improvement in the supply chain performance of manufacturing firms in Nairobi. In addition, the results show that Order processing management had a positive influence on the supply performance of manufacturing firms in Nairobi (β_3=0.325, p-value=0.008). This shows that a unit increase in the utilization of order processing management would lead to a 0.325 improvement in the supply performance of manufacturing firms in Nairobi. However, the results show that reverse

logistics, warehousing and inventory management has no significant influence on the supply performance of manufacturing firms in Nairobi since their p-value is higher than 0.05.This means transportation management, use of technologies and order processing management are suitable predictors of dependent variable or supply chain performance of manufacturing firms in Nairobi .

4.6 Supply Chain Challenges

In regard to challenges facing implementation of logistics management practices in manufacturing firms in Nairobi, the researcher sought to find out how various challenges affects implementation of logistics management practices. The findings are as indicated below;

Table 4.9 Challenges faced by manufacturing firms in Nairobi

Challenges facing Manufacturing firms	Mean	Std. Deviation
Changing organization culture	3.6522	.48698
Lack of top management support	4.2609	.86431
Lack of training and sensitization of logistics management practices	4.0870	.84816
Existing conflicts amongst manufacturing partners	3.7826	.90235
Failing to tie the logistics activities with logistics deliverables	3.8261	.49103
Ineffective communication of the vision and plan	3.9130	.59643
High cost associated with LMP	4.1739	.77765
Inadequate performance measures	3.4783	.66535
Existence of inadequate information systems	3.8261	.65033
Resistance from personnel	4.0870	.73318

Source: SPSS output (2018)

From the table above, respondents indicated that manufacturing firms faced a number of challenges in the implementing logistics management practices. Changing organization culture indicated a mean of 3.6, lack of top management commitment indicted a mean of 4.2, a mean of 4.0 for lack of training and sensitization ,3.782 for existing conflicts amongst logistics partners, a mean of 3.82 for a challenge of failing to tie the logistics activities with logistics deliverables, a mean value of 3.913 for a challenge of ineffective communication of the vision and plan, high cost challenges indicated a mean value of 4.17, Inadequate performance measures indicated a mean value of 3.47, existence of inadequate information systems indicated a mean value of 3.826 and resistance by employees indicated a mean value of 4.08.These findings indicated that manufacturing firms in Nairobi face challenges in their urge of implementing logistics management practices .These challenges come from both the internal and the external environment of the manufacturing firms which are in form of resources availability among other aspects.

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CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to discover logistics management practices and its impacts on supply chain performance of manufacturing firms within Nairobi county, extent of adoption of and the challenges of faced during implementation of same logistics management practices. This section therefore gives a summary of study findings, providing assumptions and recommendations which replicate the responses to exact inquiries for possible actions and recommendations for further research.

5.2 Summary of Findings

This section provided a summary of the findings from the analysis and this was done in line with the objectives of the study. A total of 80 questionnaires were administered to respondents who were the transport managers, supply chain managers ,production managers and their equivalent in manufacturing firms within Nairobi to provide information on logistics management practices .Out of the questionnaires that were administered, 46 were completed an indication of a 57.5% response rate. The questionnaires contained questions that addressed the research objectives. Descriptive analysis, correlation analysis and regression analysis was used in the data analysis to meet the three objectives of the study.

The biographic information indicated that majority of the respondents were university graduates followed by those with masters and finally those with college level an in indication that all the respondents had pertinent education upbringing and their answers could be used sufficiently for the study since they all had satisfactory knowledge on the information sought on logistics management practices. Besides, the study further established, most of the respondents were male accounting to 58.7% while the remaining percentage representing female counterparts. Besides, the study further established, most of the respondents had a work experience between 6-10 years followed by those aged between 11-15 years, 16-20 years and 1-5 years an indication that most of the

respondents had adverse experience in their work organizations in the field and had knowledge on the data sough on logistics management and supply chain performance. In relation to respondents age bracket, majority of the respondents was aged between 31-35 years followed those aged between 26-30yrs and above 40 years. Those between 20-25 years was the least represented with a percentage of 6.5 indicating that manufacturing firms in Nairobi consist of respondents who are above 26 years and therefore mature and able to provide answers to sought questions.

On the first objective of the study, researcher sought to identify various logistics management practices adopted by manufacturing firms in Nairobi and the findings indicated that order processing management had a mean of 4.4348, warehousing and inventory management had a mean of 4.3478, Transportation Management had a mean of 4.2174, use of technology had a mean of 4.00 and reverse logistics last with a mean of 3.8261 .From this findings, it was concluded that to a great extent, study variables as a logistics management practice had been implemented in manufacturing firms in Nairobi. However reverse logistics has been implemented to a moderate extent as compared to other logistics management practices.

On the second objective the study wanted to find out the relationship between study variables and the regression outputs revealed that indeed there was association between independent and dependent variables. The findings indicated an R-square of 0.531, implying that the all independent variables can explicate 53.1% of the dependent variable whereas the remaining 46.9% variation is explained by other factors which are not included in the model. The Analysis of variance was carried out and the findings indicated that the overall model was statistically significant at 95% confidence level.

Regression coefficients indicated that when all variables are held at zero (constant), the value of supply chain performance would be at 1.445. Transportation Management had a positive influence on the supply chain performance of manufacturing firms in Kenya (β_1=0.447, p-value=0.003). This implies that increase in the utilization of Transportation Management would lead to a 0.447 increase in supply chain performance of manufacturing firms in Nairobi. The results also showed that use of technology has a positive influence on the supply chain performance of manufacturing firms in Nairobi

(β_2=0. 890, p-value=0.000). This implies that a unit increase in the utilization of use of technology would lead to a 0.890 improvement in the supply chain performance of manufacturing firms in Nairobi. In addition, the results show that Order processing management had a positive influence on the supply performance of manufacturing firms in Nairobi (β_3=0.325, p-value=0.008). This means transportation management, use of technologies and order processing management are suitable predictors of dependent variable or supply chain performance of manufacturing firms in Nairobi.

The findings indicated that manufacturing firms faced a number of challenges in the implementing logistics management practices. These findings indicated that manufacturing firms in Nairobi face challenges in their urge of implementing logistics management practices .These challenges come from both the internal and the external environment of the manufacturing firms which are in form of resources availability among other aspects.

5.3 Conclusions

The study concludes that the introduction of logistics management practices to manufacturing firms have a high significance in the improvement of their supply chain performance hence all they should put in place measures to ensure supply chain management practices mentioned are fully adopted. From the study findings it can be concluded that LCM practices have affected supply chain performance of manufacturing firms to a great extent. The research also concludes that logistics management practices have been adopted and faced challenges to a great extent. The research also concludes that lack of top management support; cost, resistance to change and misunderstanding of LMP were the most faced challenges. In conclusion, the study was aimed at establishing the extent to which logistics management practices had been implemented by manufacturing firms in Nairobi, their impact on supply chain performance and the challenges faced in the implementation of study variables .The findings indicated that to a great extent, all the logistics management practices had been adopted by manufacturing firms in Nairobi. This was indicated by positive mean values above three indications that all the practices had been implemented to a large extent. The findings from the regression analysis indicated that logistics management practices to a moderate extent have effect on

supply chain performance of manufacturing firms in Nairobi. The results of the study ascertained a positive correlation between the various logistics practices and supply chain performance with a value of coefficient of Multiple Determination (R^2) of 0.531 implying that up to fifty three point one percent of the changes in the level of supply chain performance of manufacturing firms in Nairobi is attributed to by the various logistics management practices in Nairobi. In addition to that the p-value indicated a 0.000 value which was an indication that the various logistics management practices implemented are statically significant based on the fact that the value is less than the 0.05 level at 95% confidence level.

5.4 Recommendations

From these study findings, it was established that most of the manufacturing firms in Nairobi had implemented logistics management practices to a greater extent. However a few have not implemented the various reverse logistics used in this study, there is need for the management to incorporate the practices into their system in order to improve their performance and competiveness. The study recommends that organizational expertise especially from the production firms should be trained further on the various aspects of logistics management and the need for the same towards boosting overall firm performance of. In addition, logistic managers of various manufacturing firms should lead all these trainings to ensure that there is cutting of costs through logistics practices. The firms should therefore invest resources on training of crucial personnel associated with implementation of logistics management practices so as to boost their supply chain performance through implementation of logistics management practices.

5.5 Limitations of the Study

The study was carried smoothly however some few limitations were experienced by researcher but nevertheless researcher was determined to produce proper and accurate findings. Some of the challenges were the timeframe available for carrying out the research which was seen as minimal given the slow nature of respondents in filling questionnaires. It is believed that if more time was given, the accuracy and response rate could have improved to a significant extent. Additionally there was a challenge of

resources availability given that the study was covering diverse manufacturing firms hence it required so huge resources in terms of finances to collect and analyze such quantitative data. Some respondents also took long time in filling questionnaires which prompted researcher to make frequent calls and efforts to convince them fill them and hence being costly to researcher.

Another limitation faced by researcher in the field was reluctance to offer information citing their information is confidential and copyrighted hence attempt to provide sought information would be used to intimidate them or create a negative image of the institution they work for. Finally, the outcomes of this study were mostly grounded on respondents 'opinions about their firm hence the researcher had no unlimited control of the exactness of sought information.

5.6 Suggestions for Further Research

The study sought to determine the logistics management practices used by manufacturing firms in Nairobi. Further studies need to be carried out on other sectors other than manufacturing firms for instance service industries. In addition, future studies should consider other logistics management practices with an aim of establishing their effect on different performance indicators. This therefore means that a different industry apart from value creation industries should be considered in future studies.

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APPENDIX 1: RESEARCH QUESTIONNAIRE

This questionnaire has been designed to collect information on logistics management practices and supply chain performance of manufacturing firms in Nairobi. Please read carefully and answer the questions as honestly as possible. The information gathered will be used purely for the purpose of academic research and will be treated with utmost confidence.

Instructions

1. Tick appropriately in the box or fill in the space provided.

2. Feel free to give further relevant information to the research.

PART A: BIOGRAPHIC INFORMATION

1. Gender:

Male (   )   Female   (   )

2. Your age bracket

20-25 years (   )   26-30 years (   )   31-35 years (   )

   Above 40years (   )

3. Highest level of education

College Level (   )   University Level (   ) Masters Level (   )

4. How long have you been working with the firm?

1-5 years (   )   6-10 years (   ) 11-15 years (   ) 16-20 years (   ) above 20years (   )

PART B: LOGISTICS MANAGEMENT PRACTICES IMPLEMENTED BY MANUFACTURING FIRMS

5. To what extent has the following practices been implemented at the firm? Use **1**- Very low extent, **2**-Low extent, **3**-Moderate extent, **4**- Great extent, **5**- Very great extent

PRACTICES	1	2	3	4	5
Transportation Management Planning, execution and optimization of the physical movements of goods enabling firms to manage and optimize the daily operations of their transportation fleets.					
Use of Technology Using modern systems and technologies to manage movements, share information, enhance efficiency and locate or track goods and products within logistical networks.					
Reverse Logistics Putting in place measures to ensure existence of process of moving goods from their typical final destination for the purpose of capturing value, or proper disposal.					
Warehousing & inventory management Ensuring there is enough storage facilities; handling equipment's and inventory management systems.					
Order processing Management Ensuring systems are put in place to receive and process customers' orders in a timely manner					

PART C: LOGISTICS MANAGEMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE

6.) Indicate using a tick (√) to what extent do you agree that practices below influence supply chain performance of manufacturing firm. Rate using a scale of **1-5**, where: **1** strongly disagree, **2** Disagree, **3** neither agree nor disagree, **4** agree, **5** strongly agree

PRACTICES	1	2	3	4	5
Transportation Management					
Subcontracting vehicles for transportation					
Firm has developed systems to ensure quick repair and maintenance of trucks					
The firm has highly trained and skilled drivers on new technologies					
The firm is concerned with minimizing transportation cost					
Firm has embraced fleet tracking and management systems					
Use of Technology					
Current technologies are used for formal information sharing about new product launch with key suppliers					
Use Electronic data interchange (EDI) to manage supply chain management processes.					
Ordering system from major customer is IT enabled and automated					
The firm intranet and extranet in its supply chain functions.					
IT- based automated ordering systems are used to send					

purchase orders to major suppliers					
Reverse logistics					
The company has measures in place to ensure proper product disposal					
Customers are always given priority on default products or defects					
The company has set aside collection points or offices for customers to register their complains on default products					
The company engages in reuse and recycling or its products					
Customers are encouraged to dispose harmful products					
Warehousing & Inventory Management					
Warehousing personnel are sufficient for operations to be done					
Warehousing and inventory systems are in place to ensure smooth flow of warehousing operations					
Inventories are monitored to determine reorder points or replenishments					
Order processing management					
The company participates order management					
Customer orders are serviced within its timeline and accuracy					

PART C: SUPPLY CHAIN PERFORMANCE

7. Below are statements describing on Supply chain Performance. Kindly indicated the level to which you agree with them in accordance to the following scale:

 1-Not at all, **2**-low extent, **3**-moderate extent, **4**-large extent, **5**-very large extent

No	Description	1	2	3	4	5
1	We have experienced increased profitability					
2	We have experienced increased customer satisfaction levels					
3	We have achieved high efficiency of assets utilization					
4	There is increased productivity in the company					
5	There increased high efficiency in the company					
6	Our products are highly competitive in the industry					
7	We have improved new developed products					
8	There is high response to dynamic customer needs					
9	There is an increased level of flexibility that influences sales operations					
10	Cost reduction has been experienced					

PART D: CHALLENGES

10.) Please indicate the extent to which each of the following challenges affect implementation of Logistics management practices?

Use a Likert scale of= 1.No extent 2.small extent3.Medium extent 4.large extent 5.Very large exten

	Challenges	(1)	(2)	(3)	(4)	(5)
I	Changing organization culture while implementing logistics management practices is difficult					
ii	Lack of top management support and commitment					
iii	Lack of training and sensitization of LM practices					
iv	Existing conflicts amongst supply chain partners					
v	Failing to tie the supply chain activities with specific deliverables					
vi	Ineffective communication of the vision and plan for LM practices implementation in the workforce					
vii	High cost associated with LM practice					
viii	Inadequate supply chain performance measures					
ix	Existence of inadequate information systems linkages within the supply chain					
x	Resistance to implementation from Firm staff and suppliers					

Thank you for your contribution. I sincerely appreciate the time you spared to complete this questionnaire

Appendix II: LIST OF MANUFACTURING FIRMS IN NAIROBI COUNTY

1. 42 Geomatic Services Ltd.
2. Abu Engineering Ltd
3. Acme Container Ltd
4. Adhesive Solutions Africa Ltd
5. Africa Kaluworks (Aluware) Division K
6. Africa Oil Kenya
7. B.V African Cotton Industries Ltd
8. Agni Enterprises Ltd
9. Ali Glaziers Ltd
10. Alpha Dairy Products Ltd
11. Alpha Fine Foods Ltd
12. Apex Steel Ltd
13. AquaSanTec
14. Aquva Agencies Ltd –Nairobi
15. Arrow Rubber Stamp Company Ltd.
16. Artech Agencies (KSM) Ltd
17. Ashut Quality Products
18. ASL Ltd – HFD
19. Athi River Mining Ltd
20. Atlas Copco Eastern Africa Ltd
21. Bamburi Special Products Ltd
22. Beta HealthCare BIDCO Oil Refineries Limited
23. Bilco Engineering
24. Biodeal Laboratories Ltd
25. Blowplast Limited
26. Blue Ring Products Ltd
27. Blue Triangle Cement
28. Bobmil Industries Limited
29. Bogani Industries Ltd
30. Bosky Industries Ltd

31. British American Tobacco Kenya Ltd

32. C. Dormans Ltd

33. Chandaria Industries Limited

34. Chemplus Holdings LTD

35. Chevron Kenya Ltd

36. Chloride Exide Kenya Limited

37. Climacento Green Tech Ltd

38. Colgate-Palmolive(East Africa) Ltd

39. Collis F.B Commercial Motor Spares Ltd

40. Cosmos Limited Creative Fabric World

41. Co Ltd Creative Innovations Ltd.

42. Crown-Berger (K) Ltd

43. Cuma Refrigeration EA Limited

44. Doshi Group of Companies

45. East Africa Glassware Mart Ltd

46. East African Breweries Limited

47. East African Cables Ltd.

48. East African Portland Cement

49. Eastern Chemical Industries Ltd

50. Eco Consult LTD

51. Ecolab East Africa (K) Ltd

52. Ecotech Ltd Energy Pak (K) Ltd

53. Equatorial Tea Ltd

54. Eveready East Africa Limited

55. Excel Chemical Ltd.

56. Fairdeal Upvc, Aluminium and Glass Ltd

57. Famiar Generating Systems Ltd

58. Farmers Choice Ltd

59. Flex world Ltd

60. Foam Mattress Ltd.

61. Forbes Media Electronic Advertising Solutions

62. Furmart furnishers

63. Gahir Engineering Works Ltd

64. Goldrock international enterprises

65. Goods Chemistry Practise & Allied Cert. Corp Ltd

66. Guan Candle Making Machine Co.,Ltd.

67. Heluk International Limited

68. Hills Converters [K] Ltd

69. Hydraulic Hose & Pipe Manufacturers Ltd

70. Imani Workshops JET Chemicals (Kenya) Ltd

71. Kapa Oil Refineries Limited

72. Kenbro Industries

73. Kenya Electricity Generating Company Limited.

74. Kenya Fluorspar Company Ltd (KFC)

75. Kenya Grange Vehicle Industries Ltd

76. Kenya Petroleum Refineries Ltd

77. Kenya Power and Lighting Company Ltd

78. Kenya Solar

79. Kiesta Industrial Technical Services Ltd

80. Kim-Fay E.A Limited

81. KingSource Plastic Machinery Co.,Ltd.

82. Lake Turkana Wind Power Limited

83. Magadi Soda Company

84. Makiga Engineering Service Limited

85. Manzil Glass & Hardware Ltd

86. Mather & Platt Kenya Ltd

87. Maweni Limestone Ltd

88. Mellech Engineering & Construction Ltd.

89. Metal Crown Ltd Metsec Ltd.

90. MGS International (K) Ltd

91. Mjengo Limited

92. Mohajan Trade International

93. Mombasa Canvas Ltd

94. Ndugu Transport Co Ltd

95. New Ruaraka Hardwares

96. New World Stainless Steel Ltd

97. Njoro Canning Factory Ltd

98. Octagon Express (Kenya) Limited

99. Orbit Chemical Industries Ltd

100.   Orpower 4, Inc

101.   Packaging Industries Ltd

102.   Patco Industries Ltd

103.   Pelican Signs Ltd

104.   Petmix Feed

105.   Petroleum Institute of East Africa

106.   Platinum Packaging Limited

107.   Polythene Industries Ltd

108.   Print Fast Kenya Ltd.

109.   Protocols Microcomputer Applications

110.   Pudlo Cement Company (PCC)

111.   Pwani Oil products Limited

112.   PZ Cussons East Africa Ltd.

113.   Raghad Enterprises

114.   Ramco Printing Works Limited

115.   Redsea Chemist

116.   Reesi Hospitality Ventures

117.   Reliable Concrete Works Ltd

118.   Renscope Scientific Kenya

119.   Rhino Special Products Ltd

120.   Rock Plant Kenya Ltd.

121.   ROM East Africa Limited

122.   Rosewood Office Systems Limited

123.   Rotam Sub-Saharan Africa

124.	Rupa Cotton Mills EPZ Ltd
125.	Rural Electrification Authority
126.	Sameer Group
127.	Sanpac Africa Ltd
128.	Shade Systems(E.A)Ltd
129.	Shadetents And Exquisite Designs
130.	Shamas Motor Spares
131.	Shankan Enterprises Ltd
132.	Sigma Engineering Co. Ltd
133.	Simco Auto Parts Ltd
134.	Slumberland Kenya Ltd
135.	Solarworks East Africa
136.	South Hill Motor Spares Ltd
137.	Stainless Steel Products Ltd
138.	Stamet Products (K) Ltd
139.	Statpack Industries Limited
140.	Steel Structures Limited
141.	Sudi Chemical Industries Limited
142.	Sunrays Solar Ltd
143.	Superfit Steelcon Ltd
144.	Tamoil Africa Holdings Limited
145.	Tarpo Industries Limited
146.	Tenacity Locks Ltd
147.	The Kensta Group
148.	Tianjin Haopu Chemical Co. Ltd
149.	Top Tank
150.	Tripac Chemical Industries Ltd
151.	Unga Farm Care (EA) Ltd
152.	Unga Group Ltd.
153.	Unilever Kenya Limited
154.	Universal Ponds Kenya Limited

155.	Warren Concrete Ltd
156.	Wartsila Eastern Africa Ltd
157.	Welfast Kenya Ltd
158.	Welrods Limited
159.	Williamson Power Ltd
160.	Wines of The World Limited