



EFFECTS OF LOGISTICS MANAGEMENT ON THE ORGANISATION PERFORMANCE OF SHIPPING FIRMS IN MOMBASA COUNTY

MOSES TOROITICH KIRUI, MR. RICHARD NONDI

EFFECTS OF LOGISTICS MANAGEMENT ON THE ORGANISATION PERFORMANCE OF SHIPPING FIRMS IN MOMBASA COUNTY

Moses Toroitich Kirui^{*1}, Mr. Richard Nondi²

^{*1}Jomo Kenyatta University of Agriculture & Technology [JKUAT] Mombasa, Kenya

²Jomo Kenyatta University of Agriculture & Technology [JKUAT] Mombasa, Kenya

Accepted: September 29, 2017

ABSTRACT

In today's highly competitive business environment, organizations are striving to achieve effectiveness, cost efficiencies and economies of scale. Most of these organizations perform various logistical operations so as to meet their customers' needs. However, managing these operations in order to achieve their objectives has posed a great challenge to the firms. Many firms have not yet established how much to invest in logistics and the right balance between responsiveness and efficiency. The study sought to address the following general objective; to establish the effect of logistics management on the organisation performance of shipping firms in Mombasa. Specifically, the study established the effect of warehousing, inventory management and transportation management on organizational performance. The study employed a descriptive survey design and targeted all the shipping lines in Mombasa town. Data was collected from all the sixteen (16) shipping lines that were operational in Mombasa County. The data was gathered using structured questionnaires and analysed using both descriptive and inferential statistics, with the help of Statistical Package for Social Sciences (SPSS). The validity and reliability of the research instrument was tested using a pilot study and the Chronbach's alpha coefficient of reliability respectively. Means, percentages and Frequencies was used in data analysis and the chi-square test was used to test the hypothesis developed for the study. The Analysed data was presented using frequency distribution tables.

Key Terms: Inventory Management, Logistics Management, Supply Chain, Supply Chain Management, Transportation, Warehousing, Reverse logistics

INTRODUCTION

Across the world, logistics has advanced from the simple concepts of warehousing and transportation to become a strategic function in many companies. Sople (2010) explains that logistics capabilities supplement the supply chain operation and that it plays an important role in both organizational strategy and organizational environment. It is further noted that the leading global retail giants, Wal-Mart and Levi Strauss focus on their distinctive logistic capabilities to maintain their competitive advantage. According to Harrison and Hoek (2008), Logistics has been emerging from Peter Drucker's shadowy description as 'the economy's dark continent' for some years. From its largely military origins, logistics has accelerated into becoming one of the key business issues of the day, presenting formidable challenges for managers and occupying some of the best minds. They further explain that in the past, logistics has rightly drawn on contributions from marketing, finance, operations and corporate strategy. Logistics extends beyond the boundaries of the organization into the supply chain and it engages with the complexities of synchronizing the movement of the materials and information between many business processes.

In Kenya, the importance of logistics management continued to grow with Fast Moving Consumer Goods Companies opting for this mode to deliver their products across the country and beyond and not so much on other manufacturing sectors (Njambi & Katuse, 2013). More so, majority of those firms adopted third part logistics (3PL) in their business and did not care much to have improved inter logistics management. According to Njambi and Katuse (2013) then, in an era of shrinking product life cycles, proliferation of product lines, shifting distribution chains and rapidly changing technological advancement, use of logistics had become an essential ingredient for organizations in gaining competitive advantage. This was so since logistics management balances

two basic objectives: Quality of Service and Low Cost of doing business as every other firms objective lies on quality service and minimum production cost. Bosire (2011) researched on the Impact of logistics outsourcing on lead time and customer service among supermarkets in Nairobi and found a direct effect with the lead times of product delivery on that delivery time had tremendously reduced. Kangaru (2011) while researching on challenges of business outsourcing at the Kenya Power and Lightning found out that third party logistics providers were ahead of manufacturing companies that operated logistics departments on quality implementation and improvement issues in logistics services. A study done by Magutu, *et al.*, (2012), indicated that, 78.9% of the large manufacturing firms in Kenya had outsourced transport management while 89.5% of the firms had outsourced warehouse management. 50% of the firms had outsourced information management and inventory handling management while 73.7% of the firms had outsourced material handling management.

Gravier (2008) points out that logistics has evolved through several stages. The 1950s and 1960s witnessed the appearance of the systems concept that integrated various outbound logistics functions into physical distribution. According to him, physical distribution seeks the lowest total systems costs via functional cost trade-offs. The integrated logistics management concept of the 1980s added inbound logistics to physical distribution in response to transport deregulation and increasing globalization Coyle *et. al.*, (2008). The influence of Porter's (1985) value chain model extended logistics management to envision efficiency and effectiveness of the total system of interrelated companies from original vendors to final consumers, a concept that became known in the 1990s as Supply Chain management (SCM).

An effective global logistics manager should possess various capabilities so that he/she can

build an effective logistics hub, consolidate delivery operational channels, satisfy customer requirements at various levels, construct a speedy and efficient logistics system, coordinate internal functions and develop a competitive strategy for the entire supply chain (SC) Capacino and Britt, (1991). Abrahamson and Aronsson (1999) explain that firms have a tendency to internationalize their supply chains to allow them to leverage their regional and global systems to facilitate marketing and delivery of products and services. Therefore, in a rapidly global logistics environment, it is imperative for firms to address three main areas: supply chain management, facility delivery and delivery processes. Wilson (2007) has noted the transformation in logistics services in the US, from simple means to reduce transportation costs to one stop solution services that encompass transportation, storage, consultation, and information management. Due to globalization, the ability to respond to customer requirements quickly is critical so as to sustain competitive advantage.

There is a shortage of capable logisticians in China mainly due to the longstanding problems with the education/training system in China. Unlike other Asian countries like Singapore, Taiwan and Korea where workers are generally highly qualified and well educated, in a typical Chinese firm, when a worker is at a lower position level, he is highly likely to be poorly educated, especially in the case of logistics industry in China. To promote the importance of logistics, an official logistics certificate issuance system (National Certification Standards: Logisticians) was established by the China Ministry of Labour and Social Security MOLLS,(2003).

The performance of an organization is evaluated by how it reduces cost or increases value. Firms' performance monitoring is important; in many industries, the supply chain represents roughly 75 percent of the operating budget expense Palevich,(1999). Three common measures of performance are used when evaluating

performance: efficiency, responsiveness and effectiveness Chase et al., (2001). Efficiency implies minimization of total system wide costs from transportation and distribution to inventories of raw materials, work in process (WIP) and finished goods. To be efficient, firms should utilize strategies aimed at creating highest cost efficiency and for such efficiencies to be achieved, non-value adding activities should be eliminated, economies of scale pursued and optimization techniques deployed so as to get the best utilization capacity. To be responsive means ensuring that customers' needs/demands are attended to at the right time without delays. In order to achieve responsiveness, the firms should be flexible to the changing and diverse needs of the customers and also build to order and mass customization processes as a means to meet the specific requirements of the customers. Effectiveness on the other hand means doing the right thing at the right time. Firms should ensure that they do enough research to know what their customers need and should also get the right resources so as to serve their customers satisfactorily Janat, (2009).

Organizational performance can therefore be best measured through operational cost reduction and customer service delivery levels. As more manufacturers struggle with global markets, competition from low cost counties and faltering home economies, the attention of many manufacturers and retailers have naturally turned to cost and waste reduction. It is therefore very important to understand the best cost reduction strategies, and identify the main cost drivers in a firm's operations. While an obvious need for cost reduction arises, the reality is that many firms do not know where most of the cost of a product occurs. It is also equally important to understand the overhead structure, as this can help to identify perverse incentives that may affect later decisions Meeker and James,(2004).

The shipping industry is considered to be a sector that contributes to the world trade and economy

significantly. This is due to the fact that it is the only mode which can be used for the transport of large consignments by providing the best cost effective alternative compared to other existing alternatives such as rail, road and air. This explains why almost 90 percent of the European's Union's trade with developing countries and over 30 percent of the intra-community trade is done with the use of sea transport ESPO, (1997). 60 percent of all the international US shipments move by water transport Murphy et. al; (1991).

In Kenya, shipping has been studied more from an economic point of view and less from an organizational perspective. This is because of its significance in international trade and its effect on local, national and international level. Many shipping firms have established their presence in the country, with most of them operating as agencies with a firm presence in Mombasa town majorly due to the proximity to the port of Mombasa.

Many firms have had persistent problems in managing their logistics operations, majorly because of lack of enough qualified manpower to perform the respective operational and strategic responsibilities of their logistics function. This is because logistics job growth has outpaced the number of graduates over the past few years. Biederman (2007) in his study about logistics education established that it was not a surprise that the mismatch between supply and demand for logistics and supply chain college graduates has characterized the past two decades. According to the Council of Logistics Management, only 139 out of 1000 colleges offer logistics related courses.

The scope of customer demands on logistics has increased and involves several factors such as shrinking time windows for deliveries, customized order bookings, increased number of packaging types, customized order bookings, variations in number of products per pallet per order, increased frequency of deliveries, JIT demands,

increased product variations and less volume per order Caridi and Ciligoni, (2002). This clearly implies that managing logistics in supply networks will create new demands on logistics management and therefore new approaches and methods are needed for managers to understand and deal with the logistics processes. However, logistics research has not developed its thinking and its methods accordingly. The overall interpretation by many authors is that the identification of logistics management as a high priority is still at its initial stages. According to the theory of SCM, it emphasizes on collaborative advantage. The business world is composed of a network of interdependent relationships developed and fostered through strategic collaboration with a goal of delivering mutual benefits to all supply chain partners Miles and Snow,(1986).The recognition of logistics as strategically important is rather low but significantly growing. The shipping industry in Kenya is also rapidly expanding and logistics management forms the backbone of their operations. Jiang, Frazier and Prater, (2006) in a study aimed at empirically investigate the effect of outsourcing on the firm level performance metrics providing evidence about outsourcing influences on a firm's cost-efficiency, productivity and profitability. Given the low levels of appreciation of the logistics function in most organizations worldwide, this study will seek to address how the management of the logistics function, affects both financial and non-financial performance of the shipping firms in Mombasa County.

Objectives of the Study

- To study the effect of warehousing management on the organisational performance of shipping firms in Mombasa County
- To examine how inventory management affects the organisational performance of shipping firms in Mombasa County

- To determine the effect of transport management on the organisational performance of shipping firms in Mombasa County
- To determine the effect of reverse logistics management on the organisational performance of shipping firms in Mombasa County

RELATED LITERATURE

Theoretical Framework

The Theory of Supply Chain Management

The term supply chain management (SCM) has been used to explain the planning and control of materials and information flows as well as the logistics activities not only internally within a company but also externally between companies Fisher, (1997). A number of fields such as purchasing and supply, logistics and transportation, operations management, marketing, organizational theory, management information systems and strategic management have contributed to the explosion of the SCM theory. Many authors have highlighted the pressing need for clearly defined constructs and conceptual frameworks to advance the theory of supply chain management Saunders, (1998).

The theory of SCM emphasizes on collaborative advantage. The business world is composed of a network of interdependent relationships developed and fostered through strategic collaboration with a goal of delivering mutual benefits to all supply chain partners Miles and Snow,(1986). SCM seeks improved performance through better use of internal and external capabilities in order to create a seamlessly coordinated supply chain, thus elevating inter-company competition to inter-supply chain competition Christopher, (1996). Therefore in the context of SCM, performance is no longer affected by a single firm. Rather, performance of all

members involved contributes to the overall performance of the entire supply chain.

The emergence of supply chain management has brought a great deal of confusion in understanding the concept of logistics management. However, many researchers argue that if strictly defined, there is a clear distinction between supply chain management and logistics management as each deal with a different level of issues. It is obvious that supply chain management is used in a broader sense than logistics management. Stock and Lambert (2001) maintain that logistics management is part of the broader supply chain and there is a great deal of overlapping. Lambert and Cooper (2000) indicate that: logistics is that part of the supply chain process that plan, implements and controls the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption in order to meet customer requirements.

The Systems Theory

The Systems theory focuses on the relations between the parts. Rather than reducing an entity such as the human body into its parts or elements (e.g. organs or cells), systems theory focuses on the arrangement of and relations between the parts how they work together as a whole. The way the parts are organized and how they interact with each other determines the properties of that system. The behavior of the system is independent of the properties of the elements. This often referred to as a *holistic* approach to understanding phenomena Ahrne, (1994).

Richard et. al., (1964) explains that the systems theory can be a useful way of thinking about the job of managing. It provides a framework for visualizing internal and external environmental factors as an integrated whole. It allows recognition of the proper place and function of subsystems. The systems within which businessmen must operate are necessarily

complex. However, management via systems concepts fosters a way of thinking which, on the one hand, helps to dissolve some of the complexity and, on the other hand, helps the manager recognize the nature of the complex problems and thereby operate within the perceived environment. It is important to recognize the integrated nature of specific systems, including the fact that each system has both inputs and outputs and can be viewed as a self-contained unit. But it is also important to recognize that business systems are a part of larger systems—possibly industry-wide, or including several, maybe many, companies and/or industries, or even society as a whole. Further, business systems are in a constant state of change—they are created, operated, revised and often eliminated. The major tenets of the systems theory are: it's open to the environment; teleology/purpose; interrelated subsystems; input-transformation-output process, feedback and equifinality.

Sople (2010) points out that in most modern companies the concept of logistics is based on the systems approach. The flow of materials from the supplier to a manufacturing plant and finally to the end customer is viewed as a single chain, ensuring efficiency and effectiveness in sequential activities to achieve the objective of the customer satisfaction at a reduced cost. Logistics recognizes that all the activities of material movement across the business process as interdependent and need close coordination. These activities are to be managed as a system and not as functional silos and the ultimate objective of logistics management is to enhance total value offered to the customers by other companies in the supply chain while decreasing total cost and lead times. The functional areas of logistics termed as "Logistics mix" by Christopher (2005) consist of warehousing, information flow, inventory management, packaging and transportation.

The Coordination Theory

The coordination theory is a body of principles about how activities can be coordinated, that is, about how actors can work together harmoniously (Hewitt, 1986). There are theories, concepts, and results from many different fields that could both contribute to and benefit from the development of such general theories. For instance, it is clear that questions about how people coordinate their activities are central to parts of organization theory, sociology, social psychology, anthropology, linguistics, law, and political science. Important parts of economics and management science also analyze how people can coordinate their work with a special focus on rational ways of allocating resources Miller et. al., (1988).

Smith (1981) explains that in the coordination theory, the common problems have to do with coordination: How can overall goals be subdivided into actions? How can resources be allocated among different actors? How can information be shared among different actors to help achieve the overall goals? In its attempts to find generalizations that apply across disciplines and across levels of analysis, coordination theory resembles earlier work on systems theory and cybernetics. Many researchers agree that the major components of coordination include goals, activities, actors and interdependencies Huberman, (1988).

It is worth noting that Logistics management involves fulfilment of various organizational goals, by performing several activities (inbound logistics, outbound logistics, warehousing, distribution, materials handling, etc) so as to serve the customers profitably. Such logistics activities are interdependent and they have to be well coordinated for the firm to succeed.

The Resource Based View (RBV)

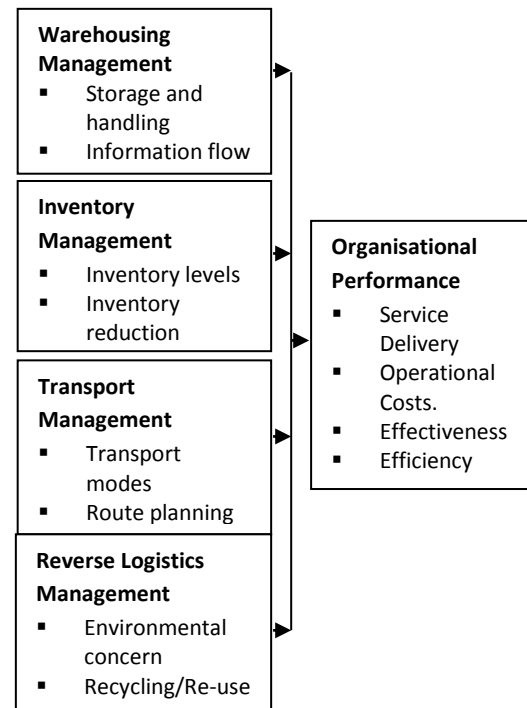
The RBV was extensively described and popularized by Barney (1991), although it is rooted in the earlier work of Wernerfelt (1984) and Penrose (1959). RBV identifies the (valuable, rare, imitable and non-substitutable) resources

owned by the firm as the source of the firm's sustainable competitive advantage. Extensions of the theory have produced several theoretical refinements including the knowledge-based view of the firm Grant,(1996), core competency Prahalad and Hamel, (1990), capabilities theory Helfat and Peteraf,(2003) and the dynamic capabilities view Teece et al., (1997).

The principal contribution of the resource based view of the firm to date has been as a theory of competitive advantage. Its basic logic is a relatively simple one. It starts with the assumption that the desired outcome of managerial effort within the firm is a sustainable competitive advantage (SCA). Achieving an SCA allows the firm to earn economic rents or above-average returns. In turn, this focuses attention on how firms achieve and sustain advantages. The resource-based view contends that the answer to this question lies in the possession of certain key resources, that is, resources having the characteristics of value, barriers to duplication and appropriability. An SCA can be obtained if the firm effectively deploys these resources in its product-markets. Therefore, the RBV emphasises strategic choice, charging the firm's management with the important tasks of identifying, developing and deploying key resources to maximise returns. In summary, the essential elements of the resource-based view are: sustainable competitive advantage and superior performance; the characteristics and types of advantage-generating resources; and strategic choices by management Barney, (1991).

The logistics managers should therefore be keen enough to identify those resources and capabilities that can help their organizations achieve a sustainable competitive advantage and achieve a superior performance.

Conceptual Framework



Independent Variables

Dependent variable

Figure 1: Conceptual Framework

Warehousing Management

Warehousing is an important part of a firm's logistics system that stores products (raw materials, parts, goods-in-process and finished goods) at and between points of origin and points of consumption. Warehousing can be provided by either warehouses or distribution centres Murphy et. al.,(2008). An important decision for many firms is the criteria for locating the warehouse facilities. Cost factors are prevalent in the decision making models. Resources such as skilled labour are also emphasized in some of the models. Another dominant factor is what might be named as accessibility, meaning infrastructure and availability of transportation modes Melachrinoudis et. al, (2000). Alberto (2000) also emphasizes time and reliability related considerations. This includes the proximity of customers manufacturing facilities and suppliers.

Sarkis and Saundaraj (2002) identify strategic considerations as a criterion, operationalized as competition, current facilities, market size and penetration as well as expansion capabilities.

The roles of warehouses are being seen as increasingly important as they change from “holding yards” to “switching yards”. Christopher (2005) lists the roles of warehouses as being: make/break bulk consolidation centres, transshipment facilities, assembly facilities, product fulfilment centres, returned goods depots and other miscellaneous roles such as customer support. This therefore means that warehouses play a key role in supporting supply chain strategies. They may simply serve markets or hold inventory and therefore provide means for achieving appropriate customer service and cost reduction in an environment prone to long lead times and disruptions.

Inventory Management

Besides the various activities associated with a lean supply chain, many firms across the world are always finding different methods and techniques to reduce their investments in inventory, because it is indirectly taxing on the profitability of the firm. Inventory management is a strategic area in logistics operation and has an impact of efficiency and effectiveness of the overall supply chain system.

Whilst inventories provide some security against fluctuations in the level of customer demand, there is concern that they may reduce the ability of supply chains to respond to changes in the nature of demand. Inventories in the international supply chains may therefore act as a buffer against one risk whilst increasing another type of risk. Etienne (2005) lists factors such as speed to the market for new products, responsiveness to market niches, and feedback time for quality issues. Harrison and Hoek (2008) have put forward inventory reduction strategies such as: reduction of production lead times, product

postponement, total cycle time, compression, centralization of inventory and the virtual warehousing concept.

Managing all kinds of assets in an organization can be viewed as an inventory problem. Nearly all the literature on optimal inventory management uses the criteria of cost minimization or profit maximization. An inventory manager’s goal for example is modelled as minimizing cost or maximizing profit while satisfying customer’s demands. Too much inventory consumes physical space, creates a financial burden, and increases the possibility of damage, spoilage and loss. Further, excessive inventory frequently compensates for sloppy and inefficient management, poor forecasting, haphazard scheduling, and inadequate attention to process and procedures. In this context the lean production principle pioneered by Womack et al. (1990) has been linked to reduced level of inventories. However, (Rajagopalan and Kumar, (1994); Herer et al., (2002); Wickramatillake et al., (2006) argue that volatility of demand may limit the application of this principle. On the other hand, too little inventory often disrupts manufacturing operations, and increases the likelihood of poor customer service. In many cases good customers may become dissatisfied and take their business elsewhere if the desired product is not immediately available.

Boute et al. (2006) concluded that companies with very high inventory ratios have more possibilities to be bad financial performers and this is consistent with the findings of Shah and Shin (2007), who reported a strong negative relationship between the cash conversion cycle and corporate profitability for a large sample of public American firms. Chen et al. (2005) by examining how the market values the firms with respect to their various inventories policies, reported that firms with abnormally high inventories have abnormally poor stock returns, firms with abnormally low inventories have ordinary stock returns while firms with slightly

lower than average inventories perform best over time. Furthermore, in another study, Shah and Shin (2007) examined the empirical associations among three constructs -inventory, IT investments and financial performance – using longitudinal data that span four decades. They concluded that reducing inventories has a significant and direct relationship with a firm's financial and operational performance.

Transport Management

Transportation management is the buying and controlling of transportation services by either a shipper or a consignee. Today, more than ever before, organizations are concerned about transportation management because transportation represents a major expense item. Transportation is the most costly logistics activity for many organizations and is pivotal to the successful operation of any supply chain Murphy et. al., (2008). Sople (2010) explains that the movement of goods from the point of production to the point of consumption is done through various modes of transportation. Depending on the transportation load, number of delivery points, existing distribution centres, product value, frequency of delivery, urgency and the cost economics, different types of networks are used.

Shah (2009) points out that the transportation cost for a given mode of transport is a function of the distance and the quantity of the goods shipped. In general, transport rates taper with the increasing distance. This implies that with increasing distance, the rate of increase of transportation costs will go down. For longer distances travelled, the related fixed costs at the points of origin and destination are distributed over more kilometres. Further, longer the distances travelled, the overall utilization of the vehicle is likely to be higher. This is known as the economies of distance in transportation. According to Chopra and Meindl (2007), a carrier makes investment decisions regarding the transportation equipment (locomotives, trucks,

airplanes, etc) and in some cases infrastructure (rail), and then makes operating decisions to try to maximize the return from these assets. A shipper in contrast uses transportation to the total cost (transportation, inventory, information, sourcing and facility) while providing an appropriate level of responsiveness to the customer.

Reverse Logistics Management

Reverse logistics is the process of planning, implementing and controlling the efficient, cost-effective flow of raw materials, in process inventory, finished goods and related information from the points of consumption to the point of origin for the purpose of recapturing value or proper disposal. The logistics activity corresponding to green marketing is referred to as reverse logistics. Reverse logistics includes product returns, source reduction, recycling, materials substitution, reuse of materials, waste disposal, and refurbishing, repair, and remanufacturing. When viewed from a business logistics perspective, the relevant issues are those of cost, customer service, profitability, partnerships/alliances, and competitive advantage Allan et. al., (2006).

Traditionally, in the supply chain of an organization there is a unidirectional flow of goods, that is from the manufacturer to the end user. Almost, the entire attention of a logistician has been focused on the forward logistics activities. Once the product is sold and delivered to the user, the manufacturer feels that there is an end to his responsibility. Manufacturers think that their responsibility is limited to the extent of replacement of defective products covered under the warranty or those damaged during transit. What is happening to the used materials, packaging waste, disposable waste generated by the finished goods supplied by them? The left over material and wrappers cause environmental pollution and create problems of disposal for the civic authority Sople, (2010).

However, in the wake of growing concern about environmental concern about environmental pollution, developed countries across the world have passed legislations that require manufacturers to take care of products discarded by their customers after usage. Leading corporations across the world are taking this as an opportunity to develop a system for reverse material flow. They are focusing on reverse logistics in order to use it as a tool for competitive advantage Allan et. al., (2006).

Performance of the Shipping Firms

The performance of the shipping firms can be broadly classified into customer service delivery levels and the operational costs of the firm. These two aspects if well monitored can ensure responsiveness and efficiency.

Customer Service Delivery Levels

A competitive advantage accrues to those firms that can quickly respond to changing market conditions Mecker, (1999). Since the Internet allows near instantaneous transfer of information between various links in the supply chain, it is ideally suited to help firms keep pace with their logistical environments. Many businesses have placed a priority upon real-time information regarding the status of orders and production from other members of the supply chain Demers, (2001). Federal Express is an example of such a business King,(1999). Federal Express allows customers to track packages easily and quickly in real-time. This makes Federal Express a critical member of other organizations' supply chains. With a proper logistics management system, a firm is able to manage the right inventory levels and deliver what is needed by the customer at exactly the right time. An effective logistics information system (LIS) also allows real time sharing of logistical information for proper management of the logistics functions.

Operational Cost Reduction

Effective logistics management helps reduce costs by reducing errors, providing better tracking of purchase orders and goods delivery, streamlining ordering processes, and cutting acquisition cycle times. Recent research by the Aberdeen group, an Internet research firm, has shown that an automated inventory system (which is part of logistics management) can cut average costs from \$100 (when done manually) to \$33 (Williams, 2002). One survey of large companies by an IT research and consulting firm found that Internet-based inventory management can save roughly 5 percent on high-cost strategic goods, allow a reduction in warehousing staff by 10 percent, and offer a high return on investment (Konicki, 2002). Thirty percent of the total product cost is usually related to logistics and therefore a reduction of a firm's logistics cost can directly reduce the operational costs of the organization.

METHODOLOGY

This study used a descriptive survey design. The study assumed a multivariate regression model of the following nature.

$$P = a + b_1WM + b_2IM + b_3TM + b_4RL + \epsilon$$

Where: P= Performance of the shipping firm

a, b1, b2, b3 and b4 are constants

WM = Warehousing Management

IM = Inventory Management

TM = Transportation Management

RL = Reverse Logistics

RESEARCH FINDINGS

On adherence to formal specialisation of labour results showed that 74% of the respondents in this research agreed on having strict adherence to a formal specialisation of labour compared to 26 percent that responded to not having a formal specialisation of labour. 53% of the firms

interviewed had a centralised management structure whereas of the other shipping

companies interviewed, 47% of them had decentralised management structure.

Level of employee Resistance on introduction of new Logistics Systems

Table 1: Resistance to New Logistics Systems

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Non Resistance	2	12.5	12.5	12.5
Very Weak	2	12.5	12.5	25.0
Moderate	5	31.3	31.3	56.3
Srong	3	18.8	18.8	75.0
Very Strong	4	25.0	25.0	100.0
Total	16	100.0	100.0	

Source Research (2017)

From the table above it was registered indicating that 25% were very strong in resisting new logistics systems, where as 18.8% were strongly resisting the introduction of new logistics systems. 31% were moderate and 12.5 were very weak and non-resistance to the logistical change and resistance of new systems.

Warehousing

The firm had made sufficient investment in warehousing infrastructure (assets)

Table 2: Investment in warehousing infrastructure

Transportation Practices	Mean	Std. Deviation
The firm has made sufficient investment in warehousing infrastructure (assets).	4.20	0.63
The logistics function has identified the best warehousing options for the firms including storage yards.	4.20	0.79
The layout of warehouses and yards has been properly planned for to facilitate easy movement of materials, vehicles and people.	4.10	0.88
Overall	4.16	0.869

Source Research (2017)

From the table above the study established that transportation management was practiced by

shipping companies in Mombasa County to a large extent as evidenced by an overall mean of (M=

4.16, $SD= 0.869$). The statements the firm had made sufficient investment in warehousing infrastructure (assets) was represented to a large extent with the mean of ($M=4.20$, $SD=0.63$). The statements logistics function had identified the best warehousing options for the firms including storage yards had registered a mean of ($M= 4.20$, $SD= 0.79$), indicating it was also done at a large extent in each case. The layout of warehouses and yards had been properly planned for to facilitate easy movement of materials, vehicles and people to a large extent with a mean of ($M= 4.10$, $SD= 0.88$),

Effective Inventory Planning

Table 3: Effective Inventory Planning

Packaging Practices	Mean	Standard Deviation
The firm has effective inventory planning models and control techniques.	4.8	0.48
Inventory control levels have been set to control the various inventory related costs.	4.7	0.49
There are adequate policy guidelines within the firm to monitor the use of inventory items in the organization.	4.7	0.48
The firm has put in place enough security measures to prevent theft and pilferage.	4.6	0.49
The firm has automated its inventory management systems to improve the levels of service delivery.	4.5	0.46
The firm adopts best practices in the industry such as JIT and efficient customer response to prevent inventory build up.	4.6	0.45
The firm focuses on inventory optimization to ensure all customers are satisfied.	4.5	0.44
There is adequate inventory documentation to facilitate effective management of inventory	4.7	0.47
Overall	4.66	0.56

Source Research (2017)

Inventory Management

One of the objectives of the study was to examine how inventory management affected the organisational performance of shipping firms in Mombasa County. The analysis of the data was done using means and standard deviations. The means recorded were interpreted as follows: 1-1.49 = To a Very Low Extent; 1.5-2.49 = To a Low Extent; 2.5-3.49 = Moderate Extent; 3.5-4.49 = To Great Extent; 4.5-5.0 =To a Very great Extent.

From the table above the study shows that effective inventory planning was practiced by shipping companies in Mombasa County to a large extent as evidenced by an overall mean of ($M=4.16, SD=0.869$). The statements the firm had made sufficient investment in warehousing infrastructure (assets) was represented to a large extent with the mean of ($M=4.20, SD=0.63$). The statements logistics function had identified the best warehousing options for the firms including storage yards had registered a mean of ($M=4.20, SD=0.79$), indicating it was also done at a large extent in each case. The layout of warehouses and yards had been properly planned for to facilitate easy movement of materials, vehicles and people to a large extent with a mean of ($M=4.10, SD=0.88$), The logistics function had established adequate measures to measure the performance

of the warehouses and storage yards to a large extent with a mean($M=4.00, SD=0.94$). The material handling system of the firm was in line with the current trends in the industry was shown with a mean ($M=4.21, SD=0.98$). On The other hand the the firms had invested in Logistics information system to facilitate effective flow of information, this was shown by ($M=4.21, SD=0.96$) and information from both suppliers and customers was well management to facilitate effective decision making in the warehouses, this was presented by a ($M=4.21, SD=0.89$).

Effect of Warehousing Management

To study the effect of warehousing management on the organisational performance of shipping firms in Mombasa County.

Table 4: Effect of Warehousing Management on Organisational Performance

Packaging Practices	Mean	Standard Deviation
The firm considers the various regulations in selecting its transportation modes.	4.7	0.54
The firm does its transport network and route planning in consultation with the various stakeholders.	4.4	0.58
The firm has adopted containerization to facilitate easy movement of cargo and curb excessive transportation cost.	4.5	0.57
Load planning is considered during transportation planning to reduce cost	4.9	0.54
The transport manager is fully involved in route planning and load planning decisions.	4.8	0.58
Overall	4.5	0.56

Source; Research (2017)

Reverse Logistics Management

The study was to determine the effect of reverse logistics management on the organisational performance of shipping firms in Mombasa County. The analysis of the data was done using

means and standard deviations. The means recorded were interpreted as follows: 1-1.49 = To a Very Low Extent; 1.5-2.49 = To a Low Extent; 2.5-3.49 = Moderate Extent; 3.5-4.49 = To Great

Extent; 4.5-5.0 =To a Very great Extent. The result

of the study were as shown in the table 5.

Table 5: Effect of Reverse Logistics

Packaging Practices	Mean	Standard Deviation
The firm uses reverse logistics for competitive advantage.	4.4	0.54
Management of returns is effectively done to avoid environmental degradation.	4.3	0.56
The firm has invested in product recycling/use for better resource management.		
The firm carries out waste disposal sensitization among its clients.	4.4	0.55
The logistics department has staff specifically responsible for reverse logistics to ensure its success.	4.3	0.56
Overall	4.5	0.56

Source: Research (2017)

Organisation Performance

The study determined the effect of transport management on the organisational performance of shipping firms in Mombasa County. The analysis of the data was done using means and

standard deviations. The means recorded were interpreted as follows: 1-1.49 = Strongly disagree; 1.5-2.49 = Disagree; 2.5-3.49 = Fairly Agree; 3.5-4.49 = Agree; 4.5-5.0 =Strongly Agree. The result of the study were as shown in the table 6.

Table 6: Effect of Transport Management

Packaging Practices	Mean	Standard Deviation
Logistics management greatly influences the time taken between placement and delivery of an order.	4.7	0.48
Logistics management affects the Level of responsiveness to customers orders and enquiries.	4.5	0.53
Effective logistics management ensures customer satisfaction and repeat purchases	4.5	0.53
The logistics management processes in your firm have greatly assisted the staff in improving operational processes within the firm and identifying problems quickly and systematically.	4.5	0.53
Staff have become more competent in Customer service operations because of	4.4	0.70

logistics management processes.		
Effective planning of the logistics functions in the firm has led to reduction in the number of staff.	4.5	0.74
The reduction of errors in service delivery can be directly linked to effective logistics management.	4.4	0.70
Because of effective logistics management, we rarely lose sales.	4.5	0.70
The cost of material handling has greatly been reduced due to effective logistics management	4.4	0.53
Due proper logistics management processes, there, are fewer damages recorded in the warehouse.	4.4	0.53
Overall	4.5	0.68

Source: Research (2017)

Table 7: Coefficients of Determinants

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error			
(Constant)	1.543	.633		2.438	1.543
Warehouse Management	.481	.108	.329	4.454	.000
Inventory Management	.469	.113	.334	4.239	.001
Reverse Logistics	.434	.106	.314	4.038	.011
Transport Management	.453	.113	.323	4.274	.003

a. Dependent Variable: Firm Performance

Source: Research Data (2017)

From the data in the above table the established regression equation is ;

$$P = 1.543 + 0.481 \text{ WM} + 0.469 \text{ IM} + 0.434 \text{ TM} + 0.453 \text{ RL}$$

Where: P= Performance of the shipping firm

a, b_1, b_2, b_3 and b_4 are constants

WM = Warehousing Management

IM = Inventory Management

TM = Transportation Management

RL = Reverse Logistics

From the table 4.6 above it is evident that at 95% confidence level, all the predictors have positive relationship on the firm performance and are statically significant. The predictors in the study also registered high values above the critical value of 3.182; this implies that the predictors have a positive and statistical significant relationship on the firm performance. Positive effect was reported for all the independent variables with warehouse management practices ($t= 4.454, p= 0.000$), inventory management practices ($t= 4.239, p= 0.001$) reverse logistics($t= 4.038, p = 0.011$), Transport Management ($t = 4.274, p= 0.003$). In this study, stochastic error term was assumed to be zero since the study captured the key logistics management practices.

CONCLUSION

The study established that there was an effect of logistics management on the organization performance of shipping firms in Mombasa County. It also confirmed that components such as warehouse management, inventory management, transport management and reverse logistics were highly practiced in most of the firms studied and this had a positive impact on organization performance.

Based on regression analysis the study established positive beta coefficients with all variables,

REFERENCES

Abrahamsson, M., & Aronsson, H. (1999), Measuring Logistics Structure, *International Journal of Logistics: Research and Applications*, 2(3), 263-284.

Ahrne , G. (1994). *Social Organizations: Interaction inside, outside and between organizations*. London: Sage.

warehouse management (0.481), Inventory Management (0.467), reverse logistics(0.434) and transport management (0.453).

RECOMMENDATIONS

Based on this study finding, the researcher recommended enough measures to be put in place to ensure there was continuous improvement in organizational performance of shipping firms in Mombasa County.

The main challenge from this study was transportation management network which was mostly affected by poor road networks and long waiting processes in clearance of goods from the Kenya Ports Authority. The government needed to expedite the process of ensuring efficiency and effectiveness in the customs clearance centers at the Kenya Ports Authority. The study further established that warehouse management and reverse logistics were crucial components in ensuring organization performance, firms need to adopt these practices in order to have a competitive edge.

AREAS FOR FURTHER RESEARCH

A research into the other factors influencing the organization performance of shipping companies in Mombasa county should be researched on since the logistics management practices used in this study could not account for all the changes in organization performance.

Further, the study only focused on the Shipping industry, particularly the in Mombasa County. The findings of this study cannot be adequately extrapolated to generalize the status of logistics management in the other industries. A similar research should be done focusing on other industries.

- Alberto, P. (2000). The Logistics of Industrial Location Decisions: An Application of the Analytic Hierarchy Process Methodology. *International Journal of Logistics*
- Bourke R. et. al. (1989). A review and Classification of Total Quality Management Research in Australia and an agenda for future research. *International Journal of Quality & Reliability Management*, 19(1), 46-66.
- Boute, R., Lambrecht, M., Lambrechts, O. & Sterckx, P. (2006). "An analysis of inventory Turnover in the Belgian manufacturing industry, wholesale and retail and the financial impact of inventory reduction", in Proceedings of the 14th 2006 Euroma Conference, Strathclyde, June
- Branch, E. (2009). *Global Supply Chain and International Logistics*, Routledge, New York.
- Capacino, W., C. & Britt, F. (1991). Perspectives on Global Logistics. *The International Journal of Logistics Management*, 2(1), 35-41.
- Caridi, M., & Cigolini, R. (2002). *Improving Materials Management Effectiveness: a step towards agile enterprise*. *International Journal of Physical Distribution & Logistics Management*, 32(7), 556-76.
- Chopra, S., & Meindl, P. (2007), *Supply Chain Management: Strategy, Planning and Operations*, (3rd Ed). Pearson Education, England.
- Coyle, J.J., Langley, C.J., Gibson, B.J., Novack, R.A. & Bardi, E.J. (2008), *Supply Chain Management: A Logistics Perspective*, South-Western Cengage Learning, Mason, OH.
- Damanpour, F. (1991). Organizational innovation: a meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34(3), 555-90.
- Demers, M. (2001). The supply chain sprint. *Electronic News*, 47(9), 14-40.
- Fisher, M. (1997). *What is the right supply chain for your product?* *Harvard Business Review*, 75 (2), 105–116.
- Grant, R. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(10), 10-22.
- Gravier, J. (2008). An Analysis of Logistics Pedagogical Literature. *The International Journal of Logistics Management*, 19(2), 233-253.
- Harrison, A., & Van, R. (2008), *Logistics Management and Strategy: Competing Through the Supply Chain*, (3rd Ed). Prentice Hall, London.
- Helfat, C., & Peteraf, M. (2003), The dynamic resource-based view: capability lifecycles", *Strategic Management Journal*, 24(10), 997-1011.
- Herer, Y., Tzur, M., & Yucesan, E. (2002), Transhipments: an emerging inventory recourse to achieve supply chain leagility, *International Journal of Production Economics*, 80(3), 201-12.
- Hewitt, C. (1986). Offices are Open Systems. *ACM Transactions on Office Systems* 4(3), 271-287.
- Huberman, B. (1988). *The Ecology of Competition*, Amsterdam, North-Holland

- Iyer, D. (2004). People and Organizational Structure: A profile Comparison Approach to Assessing Person-organizational Fit. *Academy of Management Journal*, 34(3), 487-516.
- ITC. (2006). *Managing Logistics in the Supply Chain: MLS-SCM Course Book Module 10*, International Trade Centre.
- Kent, J., & Flint, D. (1997). Perspectives on the Evolution of Logistics Thought. *Journal of Business Logistics*, 18(2), 15-29.
- King, J. (1999). Shipping firms exploit IT to deliver e-commerce goods. *Computer World*, 33(31), 24-28.
- Lorange, P. (2001). Strategic Re-thinking in Shipping Companies. *Maritime Policy and Management Journal*, 28(1), 23-32.
- Lu, C., & Marlow, P. (1999). Strategic Groups in Taiwanese Liner shipping. *Maritime Policy and Management Journal*, 26(1), 1-26.
- Melachrinoudis, E., Min, H., & Messac, A. (2000). The relocation of a manufacturing/distribution facility from supply chain perspectives: a physical programming approach. *Advances in Management Science, Multi-criteria Applications*, 10(2), 15-39.
- Meijaard, J., Brand, J., & Mosselman, M. (2005). Organizational structure and performance in Dutch small firms. *Small Business Economics*, 25(1), 83-96.
- Miles, R., & Snow, C. (1986). Network organizations: new concepts for new forms. *California Management Review*, 28 (3), 62-73.
- Miller, C., Glick, H., Wang, P., & Huber, G. (1991). Understanding technology-structure relationships: theory development and meta-analytic theory testing. *Academy of Management Journal*, 34(2), 370-99
- Miller, M. S. (1988), *Agoric Open Systems*, Amsterdam, North-Holland
- Mintzberg H. (1979). Designing Organizations for Excellence, *Human Resource Management International Journal*, 19, 8.
- MOLSS (2003). *National Certification Standards: Logisticians*, Ministry of Labour Social Security, Beijing, No. 155045-103, May.
- Molyneux, R., & Thrornton, J. (1992). Employee Organizational Commitment: The Influence of Organizational and Cultural Factors. *The International Journal of Human Resource Management*, 21(11), 2395-427.
- Mugenda, A., & Mugenda, O. (2003). *Research Methods; Qualitative and Quantitative Approaches*. Nairobi, Kenya : African Center for Technology Studies,(ACTS).
- Murphy, J., Paul, R., & Wood, F. (2008). *Contemporary Logistics*, (9th Ed.). Prentice Hall, India.
- Murphy, P., Dalenberg, R., & Daley, J. (1991). *Analysing International Water*

- Njambi, E. & Katuse, P. (2013). Third party logistics in distribution efficiency delivery for competitive advantage in fast moving consumer goods companies in Kenya. *International Journal of Social Sciences and Entrepreneurship* 1 (8), 15-27.
- Transportation: the perspectives of large US industrial corporations. *Journal of Business Logistics*, 12(1), 169-89.
- Palevich, F.R. (1999). Supply chain management. *Hospital Material Management Quarterly*, 20(3), 54-63.
- Parasuraman, A., Zeithaml, V.A., & Berry, L.L., (1993). More on improving service quality measurement. *Journal of Retailing*, 69(1), 140-47.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*, Oxford University Press, New York, NY.
- Porter, M.E. (1985). *Competitive Advantage*, The Free Press, New York, NY.
- Prahalad, C.K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3), 79-91
- Price, A. (2007). *Human Resource Management in a Business Context*, (3rd Ed.). Cengage, London.
- Rajagopalan, S., & Kumar, K.R., (1994). Retail stocking decisions with order and stock sales. *Journal of Operations Management*, 11(4), 397-410.
- Richard, A., (1964). Systems Theory and Management, *Journal of Management Science*, 10(2), 814-830.
- Sarkis, J., & Sundarraj, R. (2002). Hub location at Digital Equipment Corporation: a comprehensive analysis of qualitative and quantitative factors. *European Journal of Operational Research*, 137(2), 336-47.
- Saunders, M.J., (1998). *The comparative analysis of supply chains and implications for the development of strategies*, In: Proceedings of the Seventh International IPSERA Conference, London, pp. 469–477.