EFFECT OF LOGISTICS OUTSOURCING ON THE PERFORMANCE OF DAIRY PROCESSING FIRMS IN KENYA

BY

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A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

2018

DECLARATION

This research project report is my original work and has not been submitted in this or any other university for examination.

Signature……..Date

……..

Beatrice Mbeyu Joto

D61/84011/2016

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

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DEDICATION

I wish to dedicate this work to my dad Lawrence John Joto for his unwavering spiritual and financial help.

I further dedicate this project to my mum Ann Wanjala, my siblings Faustian, Timothy, Shally and Isaac for their tireless sacrifices, prayers and love that encouraged me to complete the study.

Be blessed.

ACKNOWLEDGEMENT

I thank God for enabling me to complete this course successfully.

My sincere gratitude to the University of Nairobi for guidance, special heartfelt appreciation to my supervisor Dr. Stephen Odock for giving me the much needed help in shaping this research project.

To all those from the dairy processing industry who sacrificed their time to fill my questionnaires, the study wouldn't have been possible without your cooperation.

To my parents, for their encouragement and prayers during my study period.

Finally, l am indebted to my university colleagues in Nairobi and friends who helped towards completion of the project.

ABSTRACT

The concept of logistics outsourcing has become increasingly popular in the dairy industry in attempt to reduce operational cost amongst other benefits that accrue. The studys objective was to determine effect of outsourcing logistics functions on performance of dairy processors , Kenya. Previous studies had indicate that firms outsource their logistics operations in attempt concentrate on their core to enhance their competitive advantages. Further contracting of service providers increased reliability, efficiency and quality. However the relationship between logisticsoutsourcing and firms' performance had not been solely established, specifically in the dairy industry. The population of study in this research was 28 dairy processors in Kenya as per KDB, 2017 and the study was a census survey of all this firms. Primary data was used and collected throughastructured questionnaire from Logistics managers or their equivalents. They were administered by 'drop and pick' method. The response rate was 89.3%. Data was analyzed using Statistical Package for Social Sciences (SPSS), descriptive statistics were generated with the main analysis tools being frequencies, mean and standard deviation to achieve the first objective. Thereafter regression analysis was done to achieve the second objective. The results established that the concept of logistics outsourcing has not been fully adopted. The firms opted to outsource services like warehouse management only during high seasons. However, the study established that firms outsource logistics operations to reduce costs such as cost of vehicle acquisitions and maintenance, fuel costs, risks cost amongst other. The study also established a high correlation between logistics outsourcing and firm's performance. Hence the research concluded that if fully adopted, logistics outsourcing can enhance firms' performance. The study recommended that dairy processing firms should fully adopt outsourcing strategy so as to cut cost on non- core activities in its logistics functions. The study was limited to dairy processing firms in Kenya as such, due to the uniqueness of dairy processing firms, the findings may not apply in other sectors. Thus, it is recommended that the study is conducted in other food processing and manufacturing sectors to establish the relationship between logistics outsourcing and performance.

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ABBREVIATIONS AND ACRONYMS

BPO	Business Process Outsourcing
ESADA	Eastern and Southern Africa Dairy Association
GDP	Gross Domestic Product
KCC	Kenya Cooperative Creameries
KDB	Kenya Dairy Board
KSAA	Kenya Ships Agents Association
LSP	Logistics Service Providers
MOLD	Ministry of Livestock Development
SLA	Service Level Agreements
SMEs	Small and Medium Enterprises
USAID	United States Agency for International Development

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Globalization has stiffened the business environment through increased complexity, wide range of products and services and increased demands of consumers. Different firms have adopted various mechanisms such as reconfigurations of processes; value creation processes dispersion and reduced product life cycle so as to increase efficiency in business operations (Vagadia, 2012). National and international markets of goods and services have also expanded logistics services (Troacă & Bodislav, 2012) .There has thus been a need for firms to increase operational efficiency to ensure timely delivery of their products gaining competitive advantage. One of the strategies firms have adopted is outsourcing. Outsourcing is the movement of organization's lnternal activities,decisions and responsibilities to outside provider(s) (Wachira, Brookes & Haines, 2016). Over time, there has been a remarkable growth in logistics outsourcing (Hirschheim, Heinzl & Dibbern, 2014).

There are various theories which anchors the relationship between logistics outsourcing and firm's performance, these include: transaction cost economics, resource view and theory of competitive advantage. The transactioncost economicsproposes the need to evaluate the cost effectiveness of operations when making make or buy decisions (Coase, 1937; Williamson, 1975). Resource basedview states that though resources arevaluable they are rare, imperfectlyimitable and non-substitatable, firm have to efficiently exploit these resources to realize competitive advantage (Hart, 1995; Crook, Ketchen, Combs & Todd, 2008).). The theory of competitive advantage focuses on why firms develop and adopt different business strategies (Porter, 1990). According to this theory, firms outsource anticipating cost reduction to enhance its competitiveness in the industry (Festus & Adenike, 2011).

In 2017, the global dairy industry was reportedly undergoing market turbulence. China's low demand, Russia's trade restrictions and EU milk quotas removal, resulting to high supply reduced prices (Delloite, 2017). The industry was still able to maintain its attractiveness, because of the population growth and changing diets. The dairy industry plays a very critical role in the lives of many people in the Eastern and Southern Africa region. A large portion of total household income comes from dairy. The industry provides up to one billion livelihoods. In 2014, milk production was estimated at 802.2 million tons. Since 2000, the

dairy industry has been having a steady positive growth of 2.3% on average every year (Eastern and Southern Africa Dairy Association, 2017). The Kenyan Dairy industry is one of the largest in Africa. Kenya's milk consumption per capita is one of the highest in the low-income developing Country (Ngotho, 2016). In East Africa, the Kenya's dairy sector is the most advanced. This study is thus motivated by the fact that due to the significance of the dairy industry, there is need to increase efficiency in the industry's operation at minimal cost. Past research findings indicated that logistic outsourcing enabled the manufacturing industry reduce cost and increase operation efficiency (Gilley & Rasheed, 2000). The study will thus establish whether logistics outsourcing has the same impact in the performance of firms in the dairy industry.

1.1.1 Logistics Outsourcing

Logistics outsourcing is the act of subcontracting logistics activities to firms equipped to provide the services (Lynch, 2004). Wachira, Brookes and Haines (2016) defined outsourcing as movement of the organization's internal activities, decisions and responsibilities to external provider(s), thus logistics outsourcing involves the contracting of the logistics functions of the firm to other parties. These parties include first party logistics providers, second service party providers, thirdparty service providers & fourthparty service providers. According to Kubr (2002), logistics outsourcing is a contractual removal and transfer of the logistics function, whereby the organization decides not to perform it itself in future, to the outside firms.

Logistics outsourcing functions include information management, transportationmanagement, warehousemanagement,materialhandlingmanagement,inventorymanagementandlnformation management (Forslund, 2012). The growth in outsourcing of logistics services has resulted more from an accident than by design due to its encouraging impact on the operational efficiency. Firms are under pressure to look for mechanisms that will enable them increase profitability and improve their competitiveness, these entails the efficiency and effectiveness on logistics activities execution (Kumar, Vrat & Shankar, 2006). Firms have opted for logistics outsourcing anticipating cost reduction and enhancement of value during distribution and transportation of goods. As a result, the concept of outsourcing the logistics function, either partially or wholly, to logistics service providers (LSPs) has increasingly

been adopted across the industry (Selviaridis & Spring, 2007). Logistics service providers are constantly contracted to offer transportation and warehousing services.

However, logistics outsourcing requires integration of firms' activities with service providers. This exposes the firm to great risk, that is, sharing of customer and suppliers data bases amongst other critical information, which if improperly used could play lead to the competitive decline of firms (Barthelemy, 2003). Logistic outsourcing also results to dependent to the service provider hence quite inflexible. Such negative impact thus need to be evaluated before opting for logistics outsourcing. Failure to adequately scrutinize the outsourcing decision leads to reversing the outsourcing decision, back-sourcing, which is expensive and challenging (Brabham, 2008; Quélin and Duhamel, 2003).

1.1.2 Firm Performance

Firm performance is defined as how well a firm executes it activities or functions. It is based on its three major results area: financialperformance, productmarket performance and shareholderreturn (Richard, Devinney, Yip & Johnson, 2009). The decision on which performance indicator to use, to determine firms progress, is dependent on prevailing industry competition. However, the most commonly used measure is profitability. Profitability is the degree to which a firm generates profit from variables in production, such as labor and capital. Firm Profitability shows how revenues and expenses relate and expected profits viz a viz the size of the business investment (Camisón & Villar-López, 2014).

The study will use firms' sales and operating profit margin to measure performance. The operating proflt margin is the returnscapital per dollar of gross firm revenue. A firm can increase its profits only by increasing per unit production profit or by maintaining profit per unit while increasing quantity produced. The operating profit margin shows the per unit produced component of earning profit (Pierre, Devinney, Yip & Johnson, 2009). Firms' net income is extracted from the incomestatement, it is determined by matchingrevenues with expenseslncurred to create revenues, add the gains or losses on the sale of firm capital assets. A firm's net income cannot be compared to another because net income is an absolutdollar amount and not aratio, comparisons therefore can be impossible especially when firms are of different sizes (Saeidi & Sofian, 2015).

1.1.3 Logistics Outsourcing and Firm Performance

Effective logistics services are a critical issue for firms' performance. Due to scarcity of resources, most firms are unable to efficiently allocate resources in areas of competition. Therefore, they must focus on core areas to concentrate their resources for them to gain competitive advantage (Gilley, McGee & Rasheed, 2004)). Firms are able to concentrate on their corecompetencies when they outsource non-strategic operations, that is, focus on operations which have a high strategic value. Outsourcing of these operations further improves both the quality and the service by enabling the firm to cut on costs and enhance its competitiveness (Gilley & Rasheed, 2000).

Logistics outsourcing as a firm performance indicator presents itself in cost reduction, reduced lead-time, reliability and quality in service deliveries, through partnership with Logistics Service Providers (LSP) who play a crucial role (Parashkevova, 2007; Lee & Song, 2015). Logistics is a functional system that is core in efficiency enhancement, in goods/information flow more so to meet low-cost, quick, and reliable delivery of firms objectives within and throughout a network of companies. Logistics operations contributes to firm's performance when carried out efficiently and effectively. The firms's supply chain capabilities and competences are based upon logistics activities and processes (Panayides, 2007).

Logistic outsourcing enables fims to leverage their resources, through turning noncore functions over to serviceproviders, spread risks and focus on issues critical to survival and future growth (Kyusa, 2015). Previous research work also suggest logistics outsourcing enhances operational efficiency (Lacity & Willcocks, 2008; Kremic, Icmeli & Rom, 2006; Gilley & Rasheed, 2000).

1.1.4 Dairy Processing Firms in Kenya

There are approximately 28 licensed dairy processors in Kenya (Appendix I). It is estimated that 5 billion liters of milk is produced in the country yearly. These provides livelihood to over 1.5million Kenyans, and contributes 4.5% of the country's gross domestic product (Kenya Dairy Board, 2018). In addition, the industry accounts for approximately 14% of agricultural GDP (United States Agency for International Development, 2010). Despite this, milk processors face a lot of challenges such as seasonality of production, poor and

inefficient dairy practices, ageing farmers and high cost of inputs. Over 80% of the total milk and dairy products marketed through the formal market channel is contributed by processors, the rest is from informal traders. The presence of informal trade is brought about by formal system inefficiencies, consumer trends, and price differences between raw and processed milk (Muriuki, 2011). Due to stiff competition, the industry saw the merging of Spin Knit Dairy and Brookside in 2010 that triggered milk price war with the New KCC resulting to a drop in the price of milk (Sambu, 2010). Further, in 2017, Brookside acquired yet another brand, Delamere yoghurt brand, resulting to increased market share in the dairy sector.

Outsourcing has been used to economize on production cost resulting to cost restructuring. Thus, the concept of logistic outsourcing will help dairy processors curb high cost of input, increase quality by concentrating resourcing on improving quality and obtaining skilled manpower (Abraham & Taylor, 1996). Further, logistics outsourcing will cut on the overall value chain cost, thus, resources are focused on developing the core business. Firms will increase their profits margins by reducing overall additional logistics costs such as vehicle purchasing, fuel cost and labor costs which enhances agility (Walker, 2007).

1.2 Research Problem

There has been increased interest in the concept of supply chain optimization over the past decade. This has been attributed to increased industrial competition as a result of globalization, e-commerce amongst other emerging business trends that have turned the world business environment to as small market place (Geunes & Pardalos, 2006). Based on this developments, firms are increasingly seeking ways to minimize the cost of value creation by adopting cost reduction strategy in the overall supply value chain. The stiff market competition has made firms to focus on their core competences, leading to increase in outsourcing practices (Rulangaranga, Ntayi & Muhwezi, 2013). However, measuring firms profitability as a result of outsourcing decisions has proven difficult according to previous literature (Jiang & Qureshi, 2006). In addition, a lot of theories have been developed to back academicresearch, but there are less tools to adopt in the day to day outsourcing decision making (Harland, Knight, Lamming & Walker, 2005).

The Kenyan dairy industry plays a significant role in the economic and nutritional aspects of the Kenyan citizens; it is a source of income to approximately 1.5million Kenyans, and

contributes to 4.5% of the Kenya's GDP (KDB, 2018). As the population grows (2.6% annually), the markets also expands and so does competition. In addition, the Kenyan government has also fueled competition through positive interventions to reduce cost of production such as; removal of tax on exported powdered milk and reduced tax on milk consumers (Andae, 2017). However, the country has also experienced inflation in the cost of living. Thus, firms still need to minimize their value addition cost to increase their profit margins, while still making the price of milk affordable to Kenya citizens.

There are various studies on the effect of logistics outsourcing on firms' performance. Nuahn (2017), carried out a study on logistics and transport practices on performance of Kenya Cooperative Creameries. The study established a positive relationship between logistics and transportation practices and performance. Thestudy however focused on logistics and transportation practices, presenting a conceptual gap, the current study will thus focus on outsourcing practices. Muathe (2017) conducted a study on logisticsoutsourcing practices & performance of large manufacturng firms. The findings showed that outsourcing of transport, inventory, warehousing and distribution operations of the firms resulted to cost efficiency and increased profitability. The study however presents a contextual gap since it focused on large manufacturing firms, the current study will seeks to establish whether the same relationship exists in the dairy industry.

Even though previous studies, Muathe, (2017); Adebambo, (2015) and Mulama (2012) found out that the correlation between logistics outsourcing practices and performance is positive, a study by Joong-Kun, Ozment and Sink (2008) on how logistics capability and logistics outsourcing impact performance in ane-commerce market environment showed no correlation between logistics outsourcing and performance which is contradictory to findings from other studies. The current study sought toaddress these gaps by answering the following research question: What is the effect of logistics outsourcing on the performance of dairy processing firms in Kenya?

1.3 Research Objectives

The general objective was to determine the effect of logistics outsourcing on firm performance. The specific objectives of the study was to:

i. Determine the extent to which logistics outsourcing is practiced by dairy processing firms in Kenya.
ii. Establish the effect of logistics outsourcing on the performance of dairy processing firms in Kenya.

1.4 Value of the Study

The study will have great implication to dairy firms in Kenya. It will help in decision making pertaining the logistics function of the firm , by enabling managers understandthe process of logisticsoutsourcing and the risks of outsourcing. The study will also enable managers make strategic decision by providing a cost cutting framework through logistics outsourcing, thus, gaining competitive advantage in both the manufacturing and service industry. In addition, this study will equip dairy processors with logistics outsourcing practices firms can adopt to improve performance. Lastly, by providing ways to minimize logistics cost, customers can enjoy quality dairy products at fair prices, the study will increase competition in the dairy industry.

The study will also be of great significance to future academicians and researchers. It will add to the body of knowledge by expounding on logistics outsourcing practices research in dairy industry. The study will further provide a theoretical review to logistics outsourcing to researchers. This will enable them understand best the topic on outsourcing. In addition, this study will equip future academicians and researchers with a useful conceptual and methodological reference to pursue further studies on the effect of logistics outsourcing on performance in service industry.

The study will further be of value to policy makers. The study will assist Kenya Dairy Creameries with developing a framework that will enhance performance of the dairy industry. The findings of the study will also assist the government in developing laws and policies crucial in making the dairy industry attractive to new investors. It can introduce incentives and other tax relief mechanisms. Hence, the government wasable to control processors while protecting citizens from high milk prices.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter explains the theories anchoring this study. A review of past studies on logistics outsourcing practices and their effects on firms' performance follows. It concludes by modeling a conceptual framework.

2.2 Theoretical Foundation of the Study

The transaction cost theory, resource-based view theory and theory of competitive advantage grounds this study by laying down a theoretical perspective to understand the relationship between logistic outsourcing and performance.

2.2.1 Transactional Cost Theory

Transactional cost theory was first conceived by Ronald Coase in 1937. The theory argues that firms should only opt to conduct in-house operations that are cost effective compared to sourcing the same operations from outside. The theory asserts that a firm is profitable if its internal operations are cost effective. The theory acknowledges that transaction costs are incurred in all economic activities, business partners thus have to protect themselves against risks resulting from these activities (Williamson 1975; Barney, 1991; Hart & Moore, 1990). The risks include: business uncertainty, bounded rationality and opportunism. According to Ronald (1937), transaction cost refers to cost of offering services through service providers' visa vie offering this services in-house. This costs include: cost of obtaining information, bargaining cost and insurance cost.

Logistics outsourcing enables firm reduce various transactional cost including; decentralizedorder processing, assets, working capital and overhead cost. Logistics outsourcing further enables the firm transfer logistics operations risks to logistic providers. Firms need thus to efficiently manage their cost to avoid incurring operational costs that would rather have been avoided. To do so Ellram (1991) suggested strategic partnerships with service providers and integration of the actors in the supply chain. Past studies findings have also shown positive correlations between outsourcing and efficiency in operation (Skjoett-Larsen, 2000; Mahnke, Overby, and Vang, 2005).

2.2.2 Resource- Based View

Resource- Based View was first introduced by Wernerfelt (1984), it was later improved by Barney (1991). According to this theory, firms' resources are valuable; enabling firms grasp opportunities presented by their external environments, scarce; not available to all the firms, imperfectly imitable; unique and cannot be replicated by other firms and non- substitutable; cannot be equated with another resource (Barney, 1991; Hart, 1995; Crook, Ketchen, Combs & Todd, 2008). The theory asserts firms' profitability is determined by its ability to effectively and efficiently exploit its valuable resources. A firm's capability is as a result of the resources it has, which controls the activities the firms can engage itself in. A firms ability to utilize its capabilities so as to carry out firms' critical activities enables it to attain competitive advantage (Haas & Hansen, 2005). There are four types of capabilities;cross-functional capabilities, broad-functionalcapabilities,activity-related capabilities and specializedcapabilities (Grant, 1996).

Due to limited resources available, firms need to concentrate on their core operations and outsource non- core operations. Logistics outsourcing enables firms to efficiently utilize the resource they have by contracting service providers to offer services which are not their core activities. This helps them became more competitive in the market. Wright & Sridharan (2002) asserts firms can only achieve competitive advantage with the help of other key players in its operations such as suppliers and other service providers. Through establishing these relationships with other firms, they are able to pull resources together with complementary resources of partnering firms; establishing a unique resource bundle (Harrison, Hitt, Hoskisson &Ireland, 2001)

2.2.3 Theory of Competitive Advantage

Introduced by Porter in 1995, the theory affirms that firms need to attain a competitive advantage over its competitors to operate profitably (Porter, 2011). Porter further stated that to operate profitably, firms need to respond to the following forces; threat of substitute products/services, threat of newentrants, suppliers bargainingpower , customers bargainingpower and rivalry amongst competitors. Porter and Advantage, (1985), suggested 3 generic strategies firms can adopt in achieving competitive advantage .These are; cost leadership,differentiation and focus. Costleadership can thus be achieved by minimizing the

overall value addition cost, ensuring the firms products end users can afford it. Differentiation is achieved by investing in a range of products that are unique in the market. Focus enables firm to either focus in cost leadership or differentiation.

Logistics outsourcing plays a significant role in this by minimizing the logistics related costs. The supply chain is said to be optimized when it's both efficient and responsive and minimum cost. To do this, the firms needs to create organization structures that will facilitate strengthening of its external relationships. Logistics outsourcing, enables firms achieve the overall business benefit in the long run by focusing on their core competencies, hence, improving organization's competitiveness in the market place or increasing shareholder returns (Maku & Iravo, 2013).

2.3 Logistics Outsourcing Practices

The firms' logistics function is an integration of various activities .It entails inward and outward movement of goods, information flow, inventory control and storage, order management and intense resource investment amongst other (Bourlakis & Melewar, 2011). The larger the size of the firm, the complex the logistics operations, hence the need to contract logistics service providers

2.3.1 Transport Management

Transport management is the upstream and downstream movement of goods/services at the firm. Most logistic costs are incurred in a firms transport operations and thus management of transport activities is very crucial in supply chain optimization (Carbone & soifer, 2009).Transportation in logistics management exists as a single concept. Thus, success in the transportation is subject to well-coordinated logistics operations. In addition, firms' transportation activities are geared towards increasing customer satisfaction levels at the least possible cost. However, this is subject to firm capacity both technical and financial and fuels costs.

Various transportation management practices have been adopted to ensure timely delivery and operational velocity, this include pool strategy, and shipment aggregation amongst others. Poll strategy combines all less than truck load orders from different shippers into one shipment creating a full track load thus saving high shipment cost. Whereas, shipment aggregation combines different orders from the same shipper into a single shipment

(Mulama, 2012). Firms are also increasingly opting for route optimization and fleet tracking to create lean transport operations and vehicle visibility respectively. Nevertheless, there is still need to increase integration and coordination with freight forwarders to enhance access to better transportation facilities and increase firms competitiveness.

2.3.2 Warehouse Management

A warehouse is a storage facility for materials, semi- finished and final consumable products. Warehouse management activities involves storage, control, internal movement of materials and processing of associate transactions such as distribution, unloading, storing and selection based on information from the Bin Card. Warehouse management systems enhances movement along the warehouse. It ensures both its layout and overall warehouse structure is suitable for efficient communication and effectiveness in the tracing and merchandising systems (Lahmar, 2007)). Efficiency in warehouse management is determined by the proximity of the most picked items to the loading place.

Due to technological advancement, hand held electronic readers have been adopted to monitor picking travel times and storage locations (Simchi, Kaminsky, Levi & Shankar, 2008). Frequent sales data review ensures items that are most picked are close to the shipping area. This minimizes warehouse cost and enhances firms responsiveness to orders by reducing cost related to increased labor picking time and lead time. Third party logistics providers enables firm enhance their competitiveness in their industry by offering technical expertise in warehouse .management and efficiency in operations. Through amalgamation, they are able to enjoy economies of scale. Firms can thus obtain warehousing services at optimal costs compared to in house operation

2.3.3 Inventory Management

This involves the procuring, handling and storage of stocks. Inventory management aims at creating lean inventory, reduction of storage, lead time and waste costs (Kenya & Mulinge, 2014). Poor inventory controls affects firms agility ,that is, improper processes lead to inventory imbalance which causes stock outs or overstocking. Effective inventory management thus strike a balance between inventory demand and the time inventory takes to be supplied Cycle counting is an inventory accuracy audit technique whereby, counting of

inventories is done on a regular basis subject to type of stock item. For example, fast moving Items therefore have frequent stock counting compared to slow moving items.

Inventory management outsourcing enhances performance though space utilization, accurate recording and efficient flow of stocks. Service providers ensures efficient inventory categorization by building capacity that enables understanding of the type and characteristics of the inventory they hold. Mulinge (2014) in his study on logisticsoutsourcing and commercial banks performance in Kenya established that inventory management outsourcing enhanced good inventiory, space utilisation, inventory flow and accuracy in inventory recording.

2.3.4 Distribution Management

Distribution management can be defined as the movement of physical goods from the production point to the consumption point at an economic value. Its activities entails order management and timely delivery of goods to the customers cost effectively. Distribution enables goods to reach their specific decisions at the right time (Rushton, Croucher & Baker, 2014). Supply chain effectiveness requires understanding of customers' needs, segments and the correct distribution channel that will facilitate transfer of value. This will in turn enhance customer satisfaction leading to improvement in firms' sales through repeat sales.

Logistics service providers have the capacity as such create a more competitive tailored service compared to internal management of the distribution activities. They thus offer customized solutions to firms' to meet their dynamic market needs leading to enhanced competitive advantage (Ayers, 2009). Further, third party logistics providers ensures timely scheduling of distribution routes, tracing and tracking of goods to avoid theft . This enables firms concentrate on their core activities such as production, while ensuring firms' scarce resources are efficiently utilized to enhance quality.

2.3.5 Information Management

Information management is very crucial in the efficient management of the overall logistic function of the firm. The activities involves obtaining, storage and efficient communication of information paramount in the smooth running of the firms operation (Karia & Wong, 2013). Information management employs, information analysis, information intelligence,

storage, optimization of information flow and ensuring technical and organizational flexibility. Effective integration of information in an organization facilitates reduction in cost, enhanced productivity and improved customer service. However, it requires intensive capital investment in technology as such the need to outsourcing the service providers to ensure accurate and timely information flow.

2.4 Empirical Review

Several studiez on the effect of logistics outsourcing on performance have been conducted. Solakivi, Töyli, Engblom and Ojala (2011) conducted a study on logisticsoutsourcing and performance of SMEs in Finland. The study aimed at establishing the logistic outsourcing practices adopted, and their effect on performance of SMEs. The study used 223 manufacturing and trading SMEs. Data was analysed using descriptive statistics with the main analysis tools being ANOVA and factor analysis. The study found out that firms are comfortable outsourcing transport operations only. The study realized outsourcing did not affect performance in any way, however, it made firm become more aggressive in monitoring and establishing internal and external collaborations to improve processes. The study concluded that firms need not to speculate immediate gains from logistics outsourcing, but should examine the firms' capabilities in making buy-make decisions. The study's limitation waz that it was based on SMEs hence need for more research to establish if the same relationship applied to large firms.

Joong-Kun, Ozment and Sink (2008) conducted a study on logistics capability, logistics outsourcing impact on firmperformance in e-commerce marketenvironment. In this study logistics outsourcing was a dichotomous variable. The study used survey research design. Descriptivestatistics was adopted for data analysis .The study findings showed that logisticscapability positively correlates with performance. However, logistics outsourcing did not positively relate with firm performance. In addition, the findings showed that there was no link between logisticscapability & outsourcing. The study's limitation was that it was constrained to the electronics retailingindustry. Thus the significance of outsourcing logistics operations was not established.

Akili (2011) conducted a study on design of logistics outsourcing strategy impact on firm's performance in Portland cement manufacturing firms in East Africa Countries. Simple

random sampling was adopted in sampling; Kenya, Tanzania and Uganda were used as sample data since they were English speaking countries as compared to the others .The study found that the concept of outsourcing had not been well organized in East Africa like other regions. Nevertheless, firms in the cement industry outsourced most of their logistics operations. The study also revealed, outsourcing firms had already felt the positive impact of outsourcing .Four rationales were established for outsourcing logistics services, that is: cost cutting, operational flexibility, time management and spreading logistics risks. The study's major limitation was that the study was conducted in developing countries, where the concept of outsourcing is not well developed.

Kyusa (2015) investigated the effect of logistics outsourcing on operationalperformance of shippingindustry in Kenya. The study used a population of 42 shipping companies' in Kenya as per the KSAA, 2015 and the study was a census survey. Data analysis was performed using descriptive statistics with the main analysis tools being frequencies, mean and standard deviation and multivariate linear regression. The studies major limitation was that it had limited external validity. The findings showed that firms chose to outsource their services because it enabled firms focus on their core competencies. Further, the findings showed that shipping firms adopted logistics outsourcing practices to facilitate focus on the longrun survival of the firm. This was because outsourcing helped them in improving customer satisfaction, reducingoperating costs and timely service delivery to clients which inturn increased productivity & reduced leadtime and improvedprofits.

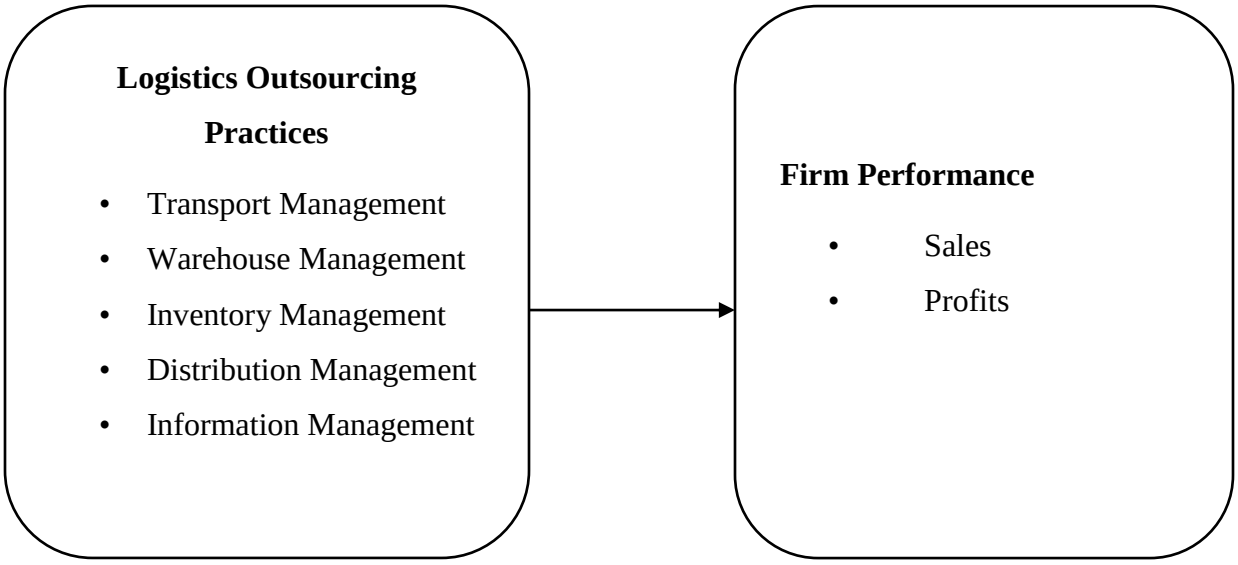
Mulama (2012) studied the impact of outsourcing logistics practices on performance of large manufacturingfirms in Nairobi,Kenya .The study used a population of all largescale manufacturing companiez in Nairobi. It adopted stratified randomsampling research methodology to determine the sample size. The study's major limitation was the heterogeneity of large manufacturing, thus the study could not use simple random sampling research method. The findings established that firms outsourced transportationmanagement,warehouse managementandmaterial handling management. The firms chose to outsource since it enabled them concentrate on their core competencies. The study concentrated on manufacturing firms thus the need for further studies on service industry.

From the above studies, logistics outsourcing positively correlates with firm performance in the manufacturing, mobile and shipping's industries. However, the same relationship does not exists in the e commerce market Further in the mobile industry, outsourcing of logistics function has major drawback such as hidden costs and exposure to various risks . Due to this mixed findings on the effect of logistics outsourcing on performance, this study seeks to establish how logistics outsourcing affects performance in the dairy industry.

2.5 Conceptual Framework

The conceptual framework is a diagrammatic presentation of the independent variables: transportmanagement, warehousemanagement, inventory management anddistribution management, and the dependent variable; firm performance. As illustrated in figure 2.1

Independent Variable **Dependent Variable**



Source: Researcher

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the methodology that guided this study. It starts by looking at the research design. A description of the population follows. The section then proceeds to give a brief description of how data collection was carried out. Thereafter the instruments reliability and validity is discussed. The section ends by looking at operationalization of the variables and a description of how data will be analysed.

3.2 Research Design

A cross-sectional survey research design was adopted for this study. A cross sectional study enables data to be collected across firms at the same point of time (Copper & Schindler, 2006). The study aim was to determine logistics outsourcing effect on performance of dairy processing firms. Data will thus have to be collected across this processing firms at similar periods.

3.3 Population of Study

The population of study wasall dairy processing firms in Kenya. According to the Kenya dairy board, there are 28 processing firms in the dairy industry (Appendix 1). A census of all the firms was undertaken since the population is small. A census is most appropriate when the population is small, this will helps the researcher cover all the elements of the population (Mugenda & Mugenda, 2003)

3.4 Data Collection

The study used primary data. Data was collected using questionnaires. The questionnaires were semi-structured, comprising of open ended and closeended questions. This will enable collection of both quantitative and qualitative data. Further, the questionnaire was divided into 3 sections; section A captured individual and firms background information. Section B covered the different logistics outsourcing practices adopted by the 28 licensed processors. Lastly, Section C highlighted performance of the respective firms. The study further targeted one respondent per firm. The questionnaires were self-administered by dropping them at the firms and picking them later after being completely filled.

3.5 Reliability and Validity Test

A pilot study was carried out prior to the actual study, to assess the study instruments reliability and validity. The questionnaire was tested on 10% of the sample of the questionnaires to ensure relevance and effectiveness (Baker, 1988). Cronbach's alpha was adopted to test questionnaire reliability(Cronbach, 1951). The acceptable Cronbach alpha coefficient is 0.7. All constructs used in this research were found to have Cronbach's Alpha of at least 0.7 meaning that reliability was established. Further, the studywill test both constructvalidity and contentvalidity. To test constructvalidity, the questionnaire was divided into sections to make sure each section addresses a certain objective, and incorporates variables in the independent variable. To test content validity, the questionnaire was scrutinized by an academic expert. The corrections were incorporated in the instrument before actual data collection was done.

3.6 Operationalizing of study variables

The variables have to be operationalized based on their indicators to measure latent constructs as shown in Table 3.1.

Table 3.1: Operationalizing of study variables

Variable	**Sub Variable**	**Indicators**	**Sources**
Logistics Outsourcing (Independent Variable)	Transport Management	- Fleet Tracking - Fuel Management - Vehicle Acquisition - Fleet Maintainace	Carbone and Soifer, (2009); Mulama (2012)
	Warehouse management	- Cost Management - Risk Management - System Automation - Acquisition of handling equipment's	Lahmar, (2007); Simchi, Kaminsky, Levi and Shankar (2008)
	Inventory Management	- Handling equipment's - Suppliers Management - Inventory Storage - Records management	Kenya and Mulinge (2014)

	Distribution Management	- Tracking of goods - Route scheduling - Order Management - Reverse Logistics Management	Rushton, Croucher & Baker, (2014); Ayers, (2009)
	Information Management	- Data mining - Data Storage - Information flow systems - Systems Integration	Karia and Wong (2013)
Firms Performance (Dependent Variable)		- Sales - Profits	Camisón and Villar-López (2014); Mulama (2012)

3.7 Data Analysis

After data collection, the questionnaires were checked to ensure they were complete, consistent and accurate. The data was then edited, coded and tabulated. To achieve objective 1, descriptive statistics which consisted of means and standard deviations were generated. To achieve objective two, multiple regression analysis was performed to ascertain the association and the relationship of logistics outsourcing and performance of firms in dairy industry. The findings were then presented in tables and graphs.

A multiple linear regression model was used to link independentvariables to the dependentvariable as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where;

Y = Firms Performance

X_1 = Transport Management

X_2 = Warehouse Management

X_3 = Inventory Management

X_4 = Distribution Management

In the model, β_0 = the constant term while the coefficient $\beta_i i = 1 \ldots 4$ was used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variables X_1, X_2, X_3

and $X_{4,,}$. μ is the error term which captures the unexplained variations in the model (Olusola et. al, 2013).

The models significance was examined using the analysis of variance (ANOVA). Thus, the actual F statistic was compared with the expected F statistic. The overall model significance was determined by a critical p value of 0.05. The analysed data was then presented using tables.

CHAPTER FOUR: DATA ANALYSIS AND INTEPRETATION

4.1 Introduction

This chapter presents data analysis and interpretation of the analysed data. It starts giving the response rate. A description of the demographics of the respondents is then given. The section then proceeds to present in tables and interpret each logistics outsourcing sub variable. The section ends by giving an explanation of the overall regressing model.

4.2 Demographic and Respondent's Profile

This section describes basic characteristics such as years of firms' operation and years the employee worked in their current position. The response rate and gender of the respondents is also given.

4.2.1 Respondents Response Rate

Out of the 28 targeted respondents, 25 successfully filled the questionnaires. This represents a responserate of 89.3% as shown in table 4.1. According to Mugenda and Mugenda (2003), a50% responserate is sufficient for analysis & reporting; a 60% rate is good , 70% and over response rateis excellent. This response rate was thus an excellent representative of the dairy processing population.

Table 4.1: Response Rate

Response	**Frequency**	**Percentage**
Response	25	89.3
Non responses	3	10.7
Total	28	100

Source: Research Data (2018)

4.2.2 Gender of the Respondent

Therespondents were asked to indicate theirgender. Majority of the respondents (68%) were male while 32% were female. This means that most milk processors outsourcing decision makers are male dominated as shown in table 4.2.

Table 4.2: Gender of Respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	17	68.0	68.0	68.0
Female	8	32.0	32.0	100.0
Total	**25**	**100.0**	**100.0**	

Source: Research Data (2018)

4.2.3 Experience of the Respondent

On the years they had worked in their respective firms. Majority of therespondents who represented 52% of the sample had worked for less than 5 years, 32% had worked for 5 to 10 years, while only 16% had worked for over 10 years as shown in table 4.2. This means that most employees had less experience in the firm however they stated that the firms had a good information database.

Table 4.3: Experience of the Respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Below 5 years	13	52.0	52.0	52.0
5 to 10 years	8	32.0	32.0	84.0
Above 10 years	4	16.0	16.0	100.0
Total	**25**	**100.0**	**100.0**	

Source: Research Data (2018)

4.2.4 Period of Existence

Majority of the firms, 44%, have been in operations for 5 to 10 years, 28% have been in operation for 11 to 15 years and 16% have been operation for over 15 years. While 12% have been in operations for a period less than 5 years as shown in table 4.4. This implies that majority of the firms which have adopted logistics outsourcing had been in the dairy industry for more than 5 years.

Table 4.4: Period of Existence

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 5 years	3	12.0	12.0	12.0
5 to 10 years	11	44.0	44.0	56.0
11 to 15 years	7	28.0	28.0	84.0
Over 15 years	4	16.0	16.0	100.0
Total	**25**	**100.0**	**100.0**	

Source: Research Data (2018)

4.2.5 Export of Products

On the question on whether their firm export dairy products to other countries. Majority of the respondents (80%) stated that they don't export products to other countries. Only 20% of the firms export their products as shown in table 4.5. Those that export were further asked to state which countries they export their products to. The firms indicated that they export their products to East Africa (Tanzania and Uganda), Egypt, South Africa, Zambia, Zimbabwe and Sudan. This implies that the dairy industry is still growing. Since just a handful have management to expand to other countries.

Table 4.5 : Whether Firm Exports its Products

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	5	20.0	20.0	20.0
No	20	80.0	80.0	100.0
Total	**25**	**100.0**	**100.0**	

Source: Research Data (2018)

4.3 Extent of Logistics Outsourcing

The first objective of the study was to examine the extent to which firms outsource logistics functions. Logistics functions include transportation management, warehouse management, distribution management, inventory management and information management. 60% of the firms outsourced the logistics functions to a moderate extent, 24% indicated that the firms outsourced their logistics function to a small extent, while 16% of the firms indicated that they outsourced logistics functions to a great extent as shown in table 4.6. The results imply that the concept of logistics outsourcing has been adopted in the milk processing industry but in moderate extent. Firms are still reluctant in fully outsourcing their non- core activities.

Table 4.6 : Extent to Which Firm Outsource Logistics Functions

	Frequency	Percent	Valid Percent	Cumulative Percent
Small extent	6	24.0	24.0	24.0
Moderate extent	15	60.0	60.0	84.0
Great extent	2	8.0	8.0	92.0
Very great extent	2	8.0	8.0	100.0
Total	**25**	**100.0**	**100.0**	

Source: Research Data (2018)

Further, the firms wererequired to indicate the degree towhich they outsource various logistics functions on a Likert scale of 1 to 5. Where 1 represented to a very smallextent, 2 smallextent, 3 to a moderate extent, 4 to a great extent and 5 to a very greatextent. The results are discussed in the following subsections.

4.3.1 Transport Management

The respondents needed to state the extent to which their firm was outsourcing activities in the transport management function. The transport management activities included: fleet tracking, fuel management, vehicle acquisition, fleet maintainace and fleet personnel management as shown in Table 4.7.

Table 4.7: Transport Management

	Mean	Std. Deviation	Rank
Fleet tracking	3.76	1.05	5
Fuel management	4.24	0.93	1
Vehicle Acquisition	3.80	0.82	4
Fleet Maintainace	3.96	0.61	3
Fleet Personnel Management	4.16	0.75	2
Average	**3.98**	**0.56**	

Source: Research Data (2018)

The most outsourced activity in transport, management was fuel management with a mean of 4.36, fleet personnel management had a mean of 4.16, fleet maintenance had a mean of 3.96, and vehicle acquisition had a mean of 3.80, while the least outsourced was fleet tracking with

a mean of 3.76. The average mean for all transport management activities was 3.98. This implies that the firms outsourced most of the transport management activities to great extent.

4.3.2 Warehouse Management

In warehouse management, the respondents needed to indicate to what extent their firm was outsourcing warehouse management activities. These activities included: warehouse cost management, risk management, system integration with warehouse service providers, acquisition of handling equipment's and enhanced protection against theft as presented in Table 4.8.

Table 4.8: Warehouse Management

	Mean	Std. Deviation	Rank
Warehouse Cost Management	3.56	0.96	3
Risk Management	3.56	1.04	3
System Integration with warehouse service providers	3.60	1.08	2
Acquisition of handling equipment's	3.48	0.96	5
Enhanced protection against theft	3.80	0.87	1
Average	**3.60**	**0.78**	

Source: Research Data (2018)

The most outsourced activity in warehouse management was enhanced protection against theft with a mean of 3.80 , System Integration with warehouse service providers had a mean of 3.60, while both warehouse cost management and risk management had a mean score of 3.56.The least outsourced warehouse management activity was acquisition of handling equipment's with a mean of 3.48. The average mean for all warehouse management activities was 3.60. This implies that the firms outsourced most of the warehouse management activities.

4.3.3 Inventory Management

The respondents needed to state the extent to which their firm was outsourcing inventory management activities. The inventory management activities includes: Inventory handling equipment's, suppliers management, system integration with inventory management service

providers, inventory storage and records management. The responses were rated on a five point scale. The results are presented in Table 4.9.

Table 4.9 : Inventory Management

	Mean	Std. Deviation	Rank
Inventory handling equipment's	3.00	1.04	4
Suppliers Management	3.04	1.14	3
System Integration with inventory management service providers	2.92	1.08	5
Inventory Storage	3.28	0.98	1
Records management	3.24	0.88	2
Average	**3.10**	**0.84**	

Source: Research Data (2018)

The most outsourced activity in inventory management was inventory storage with a mean of 3.28 ,followed by records management which had a mean of 3.24, supplies management had a mean of 3.04, inventory handling equipment's n had a mean of 3.00, while the least outsource was system integration with inventory management service providers with a mean of 2.92. The average mean for all inventory management activities was 3.10. This implies that the firms outsourced inventory management activities to a great extent but not as much as they outsourced the transport management activities.

4.3.4 Distribution Management

On the extent to which distribution management activities are outsourced in their firm's. The distribution management activities included: Tracking of goods, route scheduling, place utility management, order management and reverse logistics management. The responses were rated on a five point scale as shown in Table 4.10.

Table 4.10: Distribution Management

	Mean	Std. Deviation	Rank
Tracking of goods	3.96	0.79	1
Route scheduling	3.48	0.96	5
Place utility management	3.76	0.52	2

Order Management	3.68	0.80	4
Reverse Logistics Management	3.72	0.89	3
Average	**3.72**	**0.47**	

Source: Research Data (2018)

The most outsourced activity in distribution management was tracking of goods with a mean of 3.96, followed by place utility management that had a mean of 3.76, reverse logistics management had a mean of 3.72, order management had a mean of 3.68, while the least outsource was route scheduling with a mean of 3.48. The average mean for all distribution management activities was 3.72. This implies that the firms outsourced distribution management activities slightly more than it outsourced its warehouse management activities.

4.3.5 Logistics Information Management

Lastly, the respondents were asked to respond to the extent to which their firm outsourced logistics information management. The logistics information management activities includes: data mining, data storage, information flow systems and systems integration as presented in Table 4.11.

Table 4.11: Logistics Information Management

	Mean	Std. Deviation	Rank
Data mining	3.64	0.64	3
Data Storage	3.40	1.12	4
Information flow systems	4.04	0.61	1
Systems Integration	3.72	0.84	2
Average	**3.70**	**0.54**	

Source: Research Data (2018)

The most outsourced activity in logistics information management was information flow systems with a mean of 4.04, next was systems integration with a mean of 3.72, data mining had a mean of 3.64, while the least outsource was data storage with a mean of 3.40. The average mean for all logistics information management activities was 3.98. This implies that the firms outsourced logistics information management activities as much as it outsourced distribution management activities.

4.3.6 Summary of Extent of Logistics Outsourcing

In summary, the respondents indicated that their firms outsourced logistics functions that is transportationmanagement, warehousemanagement, distribution management, and inventory management and information management activities to a great extent. Since all their means averages were above 3 as shown in table 4.12.

Table 4.12: Summary of Extent of Logistics Outsourcing

Logistics Function	**Mean**	**Std. Deviation**	**Rank**
Transport Management	3.98	0.56	1
Warehouse Management	3.60	0.78	4
Inventory Management	3.10	0.84	5
Distribution Management	3.72	0.47	2
Logistics Information Management	3.70	0.54	3
Average	**3.62**	**0.64**	

Source: Research Data (2018)

However, the firm outsourced transport management more since it had a mean of 3.98, followed by distribution management a mean of 3.72, logistics information management (3.70) and warehouse management (3.60).The least outsourced was inventory management with a mean of 3.10.

4.4 Logistics Outsourcing and Financial Performance

The main study objective was to establish the relationship between logistics outsourcing and firms' performance. To achieve this objective, regression analysis was utilized, table 4.13 shows the interaction between the variables of study.

Table 4.13: Interaction Among the Variables of Study

FIRM	**X1**	**X2**	**X3**	**X4**	**X5**	**Y**
1	3.80	2.80	3.80	4.00	3.75	2.50
2	4.40	4.40	2.60	4.00	4.00	3.10
3	4.00	4.20	4.20	4.00	4.00	5.00
4	3.60	2.00	3.00	2.40	2.75	4.20
5	4.40	4.00	4.00	3.80	4.00	4.00
6	4.40	2.20	1.40	4.00	3.00	2.20
7	4.40	3.40	2.60	4.00	4.50	1.80

8	3.00	3.60	3.20	3.40	3.75	3.00
9	3.40	4.00	3.40	3.40	3.75	3.60
10	4.20	4.00	3.00	3.20	4.00	1.80
11	2.80	2.40	2.60	3.20	1.75	2.70
12	4.00	5.00	2.60	3.80	4.00	2.80
13	5.00	3.40	2.20	4.60	4.00	2.50
14	4.40	2.80	2.80	4.20	3.50	2.30
15	5.00	5.00	4.00	4.00	3.75	4.80
16	4.40	3.00	1.80	3.40	3.25	2.80
17	4.00	4.20	4.20	4.00	4.00	5.00
18	4.00	4.00	4.00	4.40	3.75	4.90
19	4.00	3.40	2.00	3.60	3.75	2.60
20	3.60	4.20	4.20	4.00	4.00	5.00
21	4.00	3.40	2.00	3.60	3.75	2.60
22	4.20	3.00	4.20	4.00	4.00	5.00
23	3.00	3.60	3.20	3.40	3.75	3.00
24	3.40	4.00	3.40	3.40	3.75	3.60
25	4.20	4.00	3.00	3.20	4.00	1.80

Source: Research Data (2018)

Where; Y represents performance, X1 represents transport management, X2 warehouse management, X3 inventory management , X4 distribution management and X5 represents logistics information management.

This data was then subjected to regression analysis.

Table 4.14 : Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.805[a]	.648	.555	.74778	1.211

Source: Research Data (2018)

a. Predictors: (Constant), Information Management, Inventory Management, Distribution Management, Transport Management, Warehouse Management

b. Dependent Variable: Financial performance

From Table 4.14, the coefficient of correlation r = 0.805. This shows a positive relationship exists between logistics outsourcing and performance. This coefficient of correlation was tested for significance as follows:

Step 1: Stating the hypotheses

H_0: r = 0 (the relationship between logistics outsourcing and performance is not significant.)

H_1: r ≠ 0 (the relationship between logistics outsourcing and performance is significant)

Step 2: Level of significance

Significance α = 0.05 and this is a two tailed test.

Step 3: Decision rule

Degrees of freedom = n – 2 = 25 – 2 = 23; Therefore, $t_{0.05, 23} = 2.069$

The decision rule will therefore be, reject the null hypothesis if the computed t does not fall in the region: $2.069 \leq t \leq 2.069$

Step 4: Test statistic

$$t = r\sqrt{\frac{n-2}{1-r^2}} = 0.805\sqrt{\frac{25-2}{1-0.648}} = 6.507$$

Step 5: Conclusion

Since the computed t (6.507) fall in the rejection region, the null hypothesis is rejected. This implies that the relationship between logistics outsourcing and performance is significant.

ANOVA was done to test the overall significance of the model. The results are shown in table 4.15.

Table 4.15: ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	19.525	5	3.905	6.984	.001[b]
Residual	10.624	19	.559		
Total	**30.150**	**24**			

Source: Research Data (2018)

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Information Management, Inventory Management, Distribution Management, Transport Management, Warehouse Management

It can be observed that the p value (0.001) is less than the level of significance (0.05) this means that the overall model is significant.

Next, the significance of individual parameters was tested. The results are shown in table 4.16

Table 4.16: Coefficients

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
	B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
(Constant)	.084	1.452		.058	.955		
Transport Management	.260	.357	.131	.729	.475	.577	1.733
Warehouse Management	.213	.266	.149	.801	.433	.537	1.861
Inventory Management	1.097	.216	.821	5.074	.000	.709	1.411
Distribution Management	.238	.415	.100	.574	.572	.615	1.625
Information Management	-.774	.412	-.373	-1.878	.076	.470	2.129

Source: Research Data (2018)

It can be seen that only one parameter (Inventory management) in the model was significant as indicated by its p-value of 0.000, which is less than 0.05. This implies that its' inclusion in the regression model is justified. The rest of the individual parameters p-values were; transport management 0.475, warehouse management 0.433, distribution management 0.572

and Information Management 0.076. These p-values are higher than 0.05 making the individual parameters inclusion not significant in the model.

Thus the regression model will be

$Y = 0.084+0.260\ X_1 + 0.213X_2 +1.097X_3 +0.238X_4 - 0.774\ X_5$

Where Y represents performance, X_1 represents transport management, X_2 warehouse management, X_3 inventory management, X_4 distribution management and X_5 represents information management. The model further shows that transport management positively relates to firms' performance as indicated by its coefficient values of +0.260. So does warehouse management with a coefficient of +0.213, followed by inventory management 1.097 and lastly distribution management having a coefficient of +0.238. This implies that if you increase transport management, warehouse management, inventory management and distribution management, firms' performance will also increase. Whereas, information management negatively relates to firms' performance. This means that an increase in logistics information management outsourcing reduces firms' performance.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is a summary discussion on the effect of logistics outsourcing on the performance of milk processors in the Kenya dairy industry. First, there is an highlight of the conclusion explaining the general findings of the research, Based on the study findings,recommendation precedes. Lastly, there is a discussion on the study's limitations and suggestions on areas further research.

5.2 Summary of the Findings

The study targeted 27 respondents from all the milk processing firms in Kenya out of which 25 of them managed to successfully fill the questionnaire which represented a responserate of 93%.Regarding the respondents, the findings suggested that, the milk processing firms have more male employees in logistics operations than the female gender with respective percentage of 68 and 32 percent. Regarding the period of time the respondents' worked in the milk processing firm, the findings showed that majority had experience in the milk processing firm for a period less than 5 years which had a frequency of 13, followed by those who said they had worked with in the milk processing firm for a period between 5 to 10 years with a frequency of 8 and finally only 4 of the respondents indicated to have worked for more than 10 years in their firms. The milk processing firms thus have very few old people who have worked with them for long.

On the period of time the firms have been in operation, the findings showed that various milk processors have been in the industry for different time duration. Majority have been in the industry for more than 5 years. On the firms exporting to other countries, the findings showed that majority of the respondents (80%) don't export their products to other countries, only 20% of the firms exported their products to East Africa countries (Tanzania and Uganda), Egypt, South Africa, Zambia, Zimbabwe and Sudan. The findings also revealed that the concept of logistics outsourcing has not been fully adopted in the milk processing industry. This means that firms could not fully accrue outsourcing benefits. Firms were

moderately outsourcing their logistics functions. For instance, firms preferred to partly acquire vehicles to avoid complete reliance on service providers.

The results also indicated there was indeed a +ve correlation between logistics outsourcing and performance. The most outsourced logistics function was transport management (3.98), followed by distribution management (3.72), logistics information management (3.70), warehouse management (3.60) and lastly inventory management (3.10). Transport management, warehouse management, inventory management and distribution management positively correlated with firms' performance. However, information management negatively correlated with firms' performance. This could be because information management is critical to firms' survival, thus outsourcing of logistics information management posed a great risk to the firms.

5.3 Conclusions of the Study

Based on the findings, the study concluded that dairy processing firms in Kenya were practicing logistics outsourcing so as to minimize costs and this had an effect on firms' performance. There had been improved firms performance through cutting of cost on non-core activities. Further, the dairy industry has been in operation for more than ten years in Kenya and has thus broadened its operations to other parts of the world. The study also concluded that firms were outsourcing their logistics functions, that is, transport management, distribution management, logistics information management, warehouse management and inventory management so as to cut cost on non- core logistics functions. These findings are consistent with Mulama (2012), who established that manufacturing firms were outsourcing transportationmanagement, warehousemanagement and materialhandling management to enable them concentrate on their corecompetencies. .

The study also concluded that there is a significant relation between logistics outsourcing and firm performance. These findings collaborate with those of Kyusa (2015), who found out that logistics outsourcing enhanced performance by reducing operations cost in the shipping industry. The finding are also consistent with those of Mulama (2012) who also established that logistics outsourcing had a positive correlation with performance of firms in the manufacturing sector. However, the study findings were not consistent with those of Joong-

Kun, Ozment and Sink (2008) who established that logistics outsourcing did not positively relate with firm performance. This could be because Kun, Ozment and Sink (2008) study was carried out in e-commerce market whereas this study was in dairy processing firms. Lastly, the study concluded that most firms did not have a comprehensive strategy on logistic outsourcing implementation. This showed that the general concept of outsourcing has not been understood by milk processors as such there is no clear guidance on who makes the outsourcing decision

5.5 Recommendations

The study recommends that dairy processing firms should adopt complete implementation of logistics outsourcing to enhance firms' performance. Dairy processing firm managers will have to undergo training to better understand what logistics outsourcing entails, the expectations, potential benefits and challenges .This will facilitate embracing of logistics outsourcing as an ideal practice at ensuring enhanced firms performance. Proper implementation of logisticsoutsourcing in operations of dairy processing firms is highly recomended. To enjoy total benefit , this should be done in a holistic manner instead of an isolated way. They should create strategic partnership with service providers to establish reliable service provision amongst other benefits.

In addition, the study recommends that though outsourcing positively relates with performance, other functions of logistics such as logistics information management poses a great risk to the company if outsourced. As such, firms need not to outsource information management. In a scenario that they have to. It should be restricted and the service provider agrees to get confined with a confidentiality agreement. Lastly, the study recommends that logistics outsourcing policy makers should develop comprehensive strategy on logistic outsourcing adoption. This will facilitate clear logistics outsourcing implementation strategies and give clear policies and guidelines on the same.

5.4 Limitations of the Study

The concept of performance is really broad. The study did not cover all aspects considered to constitute firms performance such as improved service delivery, reduced delays, improved service efficiency, ensure on core activities concentration, and many others. The study would have established Interesting findings if other aspects of performance had been considered. In

addition, the study was limited to milk processing firms in the dairy industry in Kenya. Whereas, there are various other industries such as manufacturing and service industries that the concept of logistics outsourcing could be adopted. The interviewees also had busy schedules and thus had limited response time.

The concept of logistics outsourcing has not also been well understood and this presented a challenge on who would best give accurate feedback and gathering information on its implementation. There were also a lot of interferences during filling of the questionnaires due to the nature of their work These findings may not be applicable across time due to the dynamic nature of the dairy industry. Hence the views provided are limited to a given time period. The study was further constrained by the short time available and due to the seasonality of the industry, the findings could have been more interesting given more time.

5.6 Suggestions for Further Research

Few studies have been carried out on logistics outsourcing in the milk processing industry. It is thus recommended that further research needs to be done not only in the dairy industry but also in food processing industries and compare the findings from both. This could also be extended to other areas within the manufacturing industry. There is also need to carry studies continuously within the same setting to establish whether the results would change as years goes by. Again there is need to conduct studies on effect of logisticsoutsourcing on non-financial performance of the firms in milk processing firms such as improved customersatisfaction, efficiency, responsiveness and timelydelivery of services amongst others.

Lastly, consumer demands and preferences change over time. Thus, products with a short life cycle need to ascertain ways to achieve responsiveness and quality in their logistics operations. Hence, the need to intensively conduct separate studies on each of the logistics outsourcing variables, that is ; transport management, warehouse management, inventory management, distribution management and information management, to establish how each of these elements affects firms logistics operations and to what extent or margins. Further, similar study can be conducted to establish how each logistic function affects the overall firm performance.

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APPENDICES

Appendix 1: List of Dairy Processors

1. Aspendos Dairy
2. Bio Food Products
3. Brookside Dairy
4. Countryside Dairy Limited
5. Doinyo Lessos Creameries
6. Egerton University/Guilford Institute
7. Eldoville Farm
8. Githunguri Dairy
9. Glacier Products
10. Happy Cow Kenya
11. Highlands Creameries
12. Ilara Dairies
13. Kabianga Dairy
14. Kenya Dairy Board
15. Kinangop Dairies
16. Kinangop Dairy
17. Lattana Dairy
18. Limuru Milk Processors
19. Molito Limited
20. Mukurwe-Ini Dairy
21. New Kenya Cooperative Creameries
22. New Sameer Agriculture & Livestock
23. Oriental Dairy
24. Premier Dairy
25. Raka Milk Processors
26. Spin Knit Dairy
27. Uplands Premium Dairy
28. Wimssy Fresh

Appèndìx ÌÌ: Letter of Ìntroductìon

Dear Respondent,

Ì am conducting a research on "***effect of logìstìcs outsourcìng on the performance of mìlk processors ìn the Kenya daìry ìndustry***". Thìs ìs a requìrement ìn the School of Busìness ìn partìal fulfìlment of the requìrement for the award of master degree ìn Busìness Admìnìstratìon at Unìversìty of Naìrobì.

Find attached a questìonnaìre, please answer all the questìons wìth your own true agreement to each. Note, no wrong responses for any of these statements. Informatìon gìven ìn the questìonnaìre wastreated wìth strìct confìdentìalìty and used for thìs research only.

Thank you for spending tìme to fìll ìn the questìonnaìre.

Yours sincerely,

Beatrace Joto
REG NO: D61/84011/2016

Appèndix III: Quèstionnairè

Thè quèstionnairè has only 3 sèctions that should takè a fèw minutès of your timè to complètè. Answèr thè quèstions by ticking thè box whèrè appropriatè.

Thank you for your coopèration.

PART A: DÈMOGRAPHIC AND RÈSPONDÈNTS PROFILÈ

1) Namè of thè company .....
2) What is your dèsignation at thè firm .....
3) Gèndèr: malè ( ) Fèmalè ( )
4) How long havè you workèd at thè firm?
    a) Bèlow 5 yèars ( )
    b) 5 to 10 yèars ( )
    c) Abovè 10 yèars ( )
5) How long has your firm bèèn in opèration?
    a) Lèss than 5 yèars ( )
    b) 6 – 10 yèars ( )
    c) 11-15 yèars ( )
    d) Ovèr 16 yèars ( )
6) Do you èxport somè of your products? Yès ( ) No ( )

If yès, plèasè statè thè countriès you èxport to.....

.....

.....

PART B: LOGISTICS OUTSOURCING PRACTISÈS

7) To what èxtènt has your firm adoptèd logistics outsourcing practicès?
    a) Vèry small èxtènt
    b) Small èxtènt
    c) Modèratè èxtènt
    d) Grèat èxtènt
    è) Vèry grèat èxtènt

8) Plèasè indicatè to what èxtènt thè following outsourcing practicès has bèèn implèmèntèd in your organization. Usè thè scalè 1- 5 , whèrè 1 is vèry small èxtènt, 2 is small èxtènt, 3 is modèratè èxtènt , 4 is grèat èxtènt and 5 is to a vèry grèat èxtènt

Transport Management					
	1	**2**	**3**	**4**	**5**
Fleet Tracking					
Fuel Management					
Vehicle Acquisition					
Fleet Maintainace					
Fleet Personnel Management					
Warehouse Management					
Warehouse Cost Management					
Risk Management					
System Integration with warehouse service providers					
Acquisition of handling equipment's					
Enhanced protection against theft					
Inventory Management					
Inventory handling equipment's					

Suppliers Management					
System Integration with inventory management service providers					
Inventory Storage					
Records management					
Distribution Management					
Tracking of goods					
Route scheduling					
Place utility management					
Order Management					
Reverse Logistics Management					
Logistics Information Management					
Data mining					
Data Storage					
Information flow systems					
Systems Intergration					

PART C: PERFORMANCE

Firms Performance

Please indicate company's sales for the last 5 years. Please tick where appropriate.

Year	< 5M	5M- 10M	11M-15M	16M -20M	Over 20M
2013					
2014					
2015					
2016					
2017					

Please indicate company's profits for the last 5 years. Please tick where appropriate.

Year	< 500000	500000-1M	1M– 2M	2M- 5M	Over 5M
2013					
2014					
2015					
2016					
2017					

Thank You for Your Participation

Appendix IV: Research Work Plan

Activity	TIMEFRAME																			
	MAY				JUNE				JULY				AUGUST				SEPTEMBER			
	Week				Week				Week				Week				Week			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Topic selection & approval	■																			
Supervisor appointment		■																		
Produce draft proposal			■	■																
Incorporate supervisor's reviews				■	■	■														
Proposal ready for presentation							■	■												
Incorporation of panel comments									■	■										
Pilot testing of questionnaire											■									
Data collection												■	■							
Data processing and analysis													■							
Review of draft by supervisor														■	■					
Incorporate supervisor comments																■				
Submit thesis																	■	■		
Defend thesis																			■	■

Appendix V: Budget

The following is a budget proposal:

Item/Activity	**Estimated Cost (Kshs)**
Stationery	5,000
Printing/Photocopying	8,000
Data Collection	40,000
Data analysis	25,000
Binding	4,500
Miscellaneous	15,000
Total cost	**97,500**