INFLUENCE OF OUTSOURCING THIRD-PARTY LOGISTICS ON THE PERFORMANCE OF FOOD AND BEVERAGES MANUFACTURING COMPANIES IN KENYA

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Influence of Outsourcing Third-Party Logistics on the Performance of

Food and Beverages Manufacturing Companies in Kenya

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2017

DECLARATION

This thesis is my original work and has not been presented for a degree in any other
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DEDICATION

This thesis is dedicated to my beloved wife Petronilla Mumbua and my children Anne Mutheu, Daniel Wambua and Ruth Wavinya for their moral support.

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LIST OF ACRONYMS AND ABBREVIATIONS

1PL	:	First Party Logistics
2PL	:	Second Party Logistics
3PL or TPL	:	Third Party Logistics
4PL	:	Fourth Party Logistics
5PL	:	Fifth Party Logistics
CSCMP	:	Council of Supply Chain Management Professionals
GDP	:	Gross Domestic Product
ICD	:	Inland Container Depot
JKUAT	:	Jomo Kenyatta University of Agriculture and Technology
KAM	:	Kenya Association of Manufacturers
KIPPRA	:	Kenya Institute for Public Policy Research and Analysis
NT	:	Network Perspective Theory
РАТ	:	Principal Agent Theory
SCM	:	Supply Chain Management
SPSS	:	Statistical Package for Social Sciences
ТСА	:	Transaction Cost Analysis Theory

DEFINITION OF TERMS

- Cost : This is the total transaction charge incurred by a company when moving goods or offering a service (Herbert, Juliana, Mikkola & Tage, 2007).
- **Fifth Party Logistics (5PL)** : Aggregates demands of 3PL and others into bulk volume for negotiation of more favourable rates with carriers and do not own physical assets and focus on technology and strategic management of supply chain and implement logistics solutions (Sople, 2013).
- First Party Logistics (1PL) : Concerns beneficial cargo owners which can be the shipper (such as a manufacturing firm delivering to customers) or the consignee (such as a retailer picking up cargo from a supplier). They dictate the origin (supply) and the destination (demand) of the cargo with distribution being an entirely internal process assumed by the firm (Will, Roberts, Ashwini, & Wininger, 2008).
- Fourth Party Logistics (4PL) : An organization that organizes other Third Party Logistics partners for outsourcing of logistics functions becoming the Lead Logistics Provider and serves as the client's primary supply chain management provider, defining processes and managing the provision and integration of logistics services through its own organization and those of its subcontractors (CSCMP, 2013).

- Lead-time : The total time that elapses between an order's placement and its receipt. It includes the time required for order transmittal, order processing, order preparation, and transit (Treville, Shapiro, & Hameri, 2004).
- Logistics Service : is creation of value which includes the ability to deliver the right product, in the right amount, at the right place, at the right time, for the right customer, in the right condition and at the right price (Sople, 2013).
- Logistics : The process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements including inbound, outbound, internal, and external movements (CSCMP, 2013).
- Manufacturing Firms: Agus (2000) described the manufacturing industry as
that which comprised of processing of raw materials,
assembling products, parts and repairing of
manufactured products.
- Outsourcing : Is the strategic use of outside resources to perform activities initially handled by internal staff and resources (Faisal, Banwet, & Shankar, 2006).
- Risk: Is an activity or undertaking that may have an adverseimpact on the achievement of an objective such asoutsourcing objective (Lysons & Farrington, 2006).

- **Risk assessment** : Is the process of identifying, analysing and evaluating hazards or uncertainties and determination of the likelihood of occurrence of each risk factor (Tummala & Schoenherr, 2011).
- Second Party Logistics (2PL) : Concerns the carriers that are providing a transport service over a specific segment of a transport chain. It could involve a maritime shipping company, a rail operator or a trucking company that are hired to haul cargo from an origin (such as a distribution center) to a destination (such as a port terminal) (CSCMP, 2013).
- Service Quality : The degree to which a set of defined characteristics of a service fulfills known requirements (CSCMP, 2013).
- **Supply Chain Management** : is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model (CSCMP, 2013).
- Third Party Logistics: A firm that provides multiple logistics services for use
by customers. These services are integrated, or bundled
together, by the provider. These are Freight forwarders,
Courier companies and other companies integrating and
offering subcontracted logistics and transportation
services (CSCMP, 2013).

ABSTRACT

Manufacturing companies in Kenya have been experiencing problems in the performance of their production and operations management. One strategy of improving their performance is resorting to logistics outsourcing. Emerging trends in Logistics have led to development of new ways of doing business to cope with the inherent logistics uncertainty and market volatility. Outsourcing of non-core activities to Third Party Logistics providers (3PL) is one of the ways of ensuring efficient and effective performance of companies' supply chain management by controlling logistics cost, risk, delivery lead-times and sustaining quality to achieve the desired level of service to satisfy their customers. This study therefore, sought to establish the influence of outsourcing Third Party Logistics providers on the performance of food and beverages manufacturing companies in Kenya. The study adopted cross-sectional survey design using both quantitative and qualitative approaches. The target population of this study was 197 registered food and beverages manufacturing companies in Kenya as per Kenya Association of Manufacturers (KAM) Directory 2015. The study used stratified random sampling to pick a sample size of 116 respondents from food and beverages manufacturing companies. Data was collected using a questionnaire. Descriptive statistics was used aided by Statistical Packages for Social Sciences (SPSS) version 24 to compute percentages of respondents' answers. Inferential statistics using linear regression and correlation analysis was applied in examining relationship between the research variables. The study found out that cost, service quality, lead-time and risk assessment were significant predictors in the performance of food and beverages manufacturing companies in Kenya. On cost, the study found out that transportation and distribution costs, customs clearance, document processing, freight forwarding, tracking and tracing affected performance of food and beverages manufacturing companies in Kenya. Concerning lead-time, the study established that order processing rate, high order fulfilment rate, inventory replenishment, delivery speed, delivery to location and delivery planning improved the performance of food and beverages manufacturing companies in Kenya. Based on service quality, it was revealed that timeliness, consistency and accuracy of service delivery, willingness to help customers, prompt services to the customers and flexibility of service delivery affected performance of food and beverages manufacturing companies in Kenya. Based on risk assessment, it was established that delay in logistics service delivery and logistics service providers' capacity, logistics provider system, loss or damage of assets, interruptions of service levels, loss of income and liability incurred affected performance of food and beverages manufacturing companies. Lastly, the study established that food and beverages manufacturing companies in Kenya were outsourcing from multiple logistics companies which is not only costly but also cumbersome to manage. Therefore, the study recommended that it would be appropriate for management to consider cost, lead-time, service quality and risk assessment as a criteria of outsourcing 3PL providers in improving performance of food and beverages manufacturing companies in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Outsourcing of logistics services in a manufacturing company is very important because it facilitates seamless delivery of parts and raw materials from the suppliers to the manufacturers and ensures distribution of finished goods from the factory to the point of consumption. Over the last decades, logistics has tremendously evolved from a simple activity that moves goods from the shipper to a consignee to include the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods and the related information from the point of origin to the point of consumption (Stefansson, 2006; Lucie & Hudziak, 2012). This evolution led to creation Third Party Logistics (3PL) providers. The term "3PL" was first used in the early 1970s to identify intermodal marketing companies in transportation contracts during a time of expanding globalization and an increased use of information technology (CSCMP, 2013).

There are many definitions that describe 3PL providers and the associated activities. According to the Council of Supply Chain Management Professionals (CSCMP, 2013), a Third Party Logistics (3PL) provider is a firm which provides multiple logistics services for use by customers and preferably, these services are integrated or "bundled" together by the provider. These 3PL firms offer a variety of logistics services which include warehousing, consolidation, packaging, goods inspection, and import and export advisory services as a package (Mathenge, Anrnold, Dihel & Strychacz, 2011). Due to its nature, a 3PL company affects the relation between shippers and consignees and takes over some part of the primary parties' role (Stefansson, 2006). Third Party Logistics (3PL) providers' roles differ depending on the level of involvement and the number of outsourced logistics services. Third Party Logistics providers play vital role in cost reduction, productivity, profits as well as the improvement of the service quality

of their customers and thus become important part of supply chain management and successful logistics outsourcing can provide significant benefits, both, to industries and third party logistics providers (Vishal, Nitin, Satiish, & Nishant, 2013). The objectives and concerns related to TPL outsourcing are cost reduction, reduction of delivery time, concentration on core competencies, increasing flexibility and concerns are loss of control, dependence on service provider and losing direct customer contact (Vishal *et al.*, 2013).

It is widely accepted that the outsourcing of logistics services aims at enabling the creation of strategic and operational value and majority of shippers, that is, 64% are increasingly using 3PLs (Lucie & Hudziak, 2012). These 3PL providers can handle more than 5,000 containers per year and account for relatively for 60% to 80% of the taxes collected by Kenya Revenue Authority in Kenya (Mathenge *et al.*, 2011). Most of these 3PL providers, offer efficient and effective complete logistics solutions including inbound logistics, warehousing and outbound logistics services to their clients. Today there are two major trends on the 3PL market; on one hand shippers are increasingly relying on 3PL services and on the other hand they are reducing the number of 3PL companies they use (Lucie & Hudziak, 2012). Third-party logistics (3PL) providers are able to take over the supply chain functions of businesses and manage them better in many cases than what the companies can do on their own.

1.1.1 Third Party Logistics

Third Party Logistics (3PL) providers are service providers who offer logistics solutions to ensure effective and efficient performance of supply chain management. Companies outsource the services of 3PL for many reasons including; to gain access best practices, to improve service quality, to control logistics cost, to increase speed, to properly manage its resources, to spread its risks and to focus on issues that are very much crucial to their existence and future growth. Third Party Logistics (3PL) has many interpretations and definitions. Lieb, Millen & Wassenhove (1993), define 3PL provider as the external company to carry out the logistics functions that have conventionally

been executed within an organization. A Third Party is neither the shipper nor the customer in the supply chain. According to definition by the Council of Supply Chain Management (CSCM, 2013; Forrest, Will, Roberts, Ashwini, & Wininger, 2008), First Party Logistics (1PL) concerns the beneficial cargo owners which can be the shipper or the consignee and they dictate the origin and the destination of the cargo. The Second Party Logistics (2PL) concerns the carriers that provide transport services over a specific segment of a transport chain and could involve a maritime shipping company, a rail operator or a trucking company that are hired to haul cargo from an origin to particular destination. Third Party Logistics (3PL) providers are Freight forwarders, Courier companies and Other companies integrating and offering subcontracted logistics and transportation services (CSCMP, 2013). Preferably, these services are integrated or "bundled" together by the provider and they include transportation, warehousing, cross-docking, inventory management, packaging, and freight forwarding.

Third Party Logistics provider is evolving from a predominately transactional role to one that is more strategic in nature (Green, Turner, Roberts, Nagendra, & Wininger, 2008 ; Forrest *et al.*, 2008). The business model of 3PL is essentially based on the creation of customized logistics services which enables 3PLs to differentiate from the traditional transportation market and access higher margins (Large, Kramer & Hartmann, 2011). The number of 3PL providers has been increasing rapidly in both the developed and the developing economies. Examples of Third Party Logistics (3PL) Providers that are present in Kenya include DHL Global Forwarding, Bolloré Africa Logistics, Acceler Global Logistics, Kuehne & Nagel, Panalpina Logistics (3PL) providers typically specializes in integrated warehousing and transportation services that can be scaled and tailored to customer needs based on market conditions and the demand and delivery service requirements for their products and materials (Skjoett-Larsen, 1999). Third Party Logistics (3PL) provider is evolving from a predominately transactional role to one that is more strategic in nature.

1.1.2 Global Perspective of Third Party Logistics

Rapid environmental changes, competition to provide innovative products and services, changing customer and investor demands and globalization have become the standard backdrop for firms. To compete effectively, organizations must constantly improve their performance by reducing costs, enhancing quality, and differentiating their products and services (Waiganjo, 2013). The Third Party Logistics (3PL) industry worldwide has continued its growth from 1970s, and has been increasing its importance as a means of coping with rapid changes in the global competitive environment (SoonHu, 2010). As a consequence of technology developments and globalization, exporters and importers are increasingly outsourcing their logistics activities to Third Party Logistics (3PL) providers whose activities efficiency and effectiveness are responsible for the success of their businesses (Lucie & Hudziak, 2012). At the same time exporters and importers decrease the number of 3PL providers they use, making the competition tougher for logistics providers (Lucie & Hudziak, 2012).

A research by Pricewaterhouse Coopers (2007) established that outsourcing engagements worldwide have been growing and will continue to grow consistently both in terms of number of contracts and the average contract value. Therefore, improvements in international logistics services are the main features of economic growth. Outsourcing has emerged as one of the popular and widely adopted business strategies of this globalized era. The use of 3PL providers can yield important benefits such as reduced logistics costs, improved order fill rates, and shortened average order-cycle lengths and cash-to-cash cycles (SoonHu, 2010). A company may reduce its total transaction costs (ex-ante and ex post costs of contact and control) by cooperating with external partners (Herbert *et al.*, 2007). Choosing the right Outsourcing partners gives an organization exposure to vendor specialized systems which provides more efficiency that allows for a quicker turnaround time and higher levels of quality (Ngonela, Mwaniki & Namusonge, 2014). Logistics outsourcing has generally been accepted as the best practice of achieving high performance in supply chain management.

1.1.3 Kenyan Perspective of Third Party Logistics

In Kenya, some companies perform their logistics services in house while other companies outsource multiple logistics providers for their supply chain management which is not only costly to run but also cumbersome to manage. As a result, there can be conflicting messages among departments and between the appointing company and the TPL provider, which leads to glitches in integration and can result in the company getting less than full value from the TPL (Vishal *et al.*, 2013). Further, several organizations seem indifferent on whether to fully outsource their logistics services to multiple logistics firms, or perform some of the logistics functions in-house or outsource all the logistics services to one larger logistics company or 3PL provider (Vishal *et al.*, 2013; Ngonela *et al.*, 2014). For companies to be able to survive in today's competitive markets, they must focus on their core competencies and adopt outsourcing as a strategic solution to improve quality of service and reduce costs as well as concentrate on core processes.

1.1.4 Food Manufacturing Companies in Kenya

Since achieving independence, Kenya's economy has remained largely agriculture based and manufacturing being part of industrialization is a key factor in Kenya's development plans. According to KAM Directory 2015, Food and Beverages is the largest sector in the manufacturing industry comprising of 197 companies contributing 21.92% of the total KAM's membership. According to Kenya Institute for Public Policy Research and Analysis (KIPPRA) 2013, the manufacturing sub-sector in Kenya constitute 70% of the industrial sector's contribution to GDP. The sector is predominantly agro-processing, with manufacture of food, tobacco, beverages and textile accounting for over 34.0% of total sectoral value added (KIPPRA, 2013; Government of Kenya, 2007; Vashta, 2012). The manufacturing sector in Kenya is among the key productive sectors identified for economic growth and development because of its immense potential for wealth, employment creation and poverty alleviation (Vashta, 2012). The government's commitment to the realization of Vision 2030 depends on corroborated effort to address the costs of production and other factors contributing to the high cost of doing business (KIPPRA, 2013). The food and beverages industry has a unique role in expanding economic opportunity because it is universal to human life and health (Vashta, 2012).

The competitive manufacturing environment is one that is rapidly changing as globalization and technology force organisations to constantly seek ongoing improvement in all areas in terms of their knowledge, flexibility and performance (Stock & Lambert, 2001). According to a report by the Ministry of Industrialization Enterprise and Development during the Industrialization conference held at KICC Nairobi on 19th November 2013, food processing covers: foods, beverages, dairy, vegetable oil, grain milling, baking and confectionery, fruits and vegetables, meat and fish, honey, nuts, mushroom, etc. The report revealed that food sector constitute about a third of the manufacturing sector in Kenya and that the sector adds value to agricultural produce and therefore its success depends on efficient agriculture sector. The report further claimed that the manufacturing sector employed 266,400 people in 2009 out of which 89,319 jobs (or 33.5%) were in the foods processing sector. The Manufacturing sector contributes about 10% of the Kenya's GDP of which the food sector contributed about a third (33.4%) of the total manufacturing production in 2009. The food processing sector can therefore be a key driver of the economic growth and growth in this sector can have a direct and significant impact on the whole Kenya's economy. Logistics, for example, is receiving growing attention as an area in which efficiency and productivity increases can be made in order to improve customer service and to lower costs (Stock & Lambert, 2001). In this case, a 3PL designs, co-ordinates and executes a supply chain strategy while providing the company with value-added information to better manage core competencies.

1.2 Statement of the Problem

Manufacturing companies in Kenya have been experiencing problems in the performance of their production and operations management (KAM Directory, 2015). One strategy of improving their performance is resorting to logistics outsourcing. While

some companies have opted for outsourcing their logistics services, their performance has continued to deteriorate and thus several manufacturing companies are in a dilemma on whether to perform in-house logistics services or to outsource the services from Third Party Logistics (3PL) providers (Lucie & Hudziak, 2012). According to Alan, Phil and Peter (2006) logistics services contribute over 50 per cent of companies operating cost. Outsourcing of logistics services enables the creation of strategic and operational value and 64% of shippers are increasingly using 3PLs (Lucie & Hudziak, 2012). A study by Langley (2015) on the state of logistics outsourcing revealed that the total logistics cost of the companies reduced from 44% to 36% as a result of outsourcing logistics services. In the competitive and dynamic environment, manufacturing companies are looking for ways of enhancing efficiency and productivity, reducing cost, ensuring timely delivery, improving service quality and risk assessment which remains a challenge to manufacturing companies in maintaining their competitive edge (Vishal et al., 2013; Ngonela et al., 2014 & SoonHu, 2010). This study sought to investigate on influence of outsourcing 3PL by the food and beverage manufacturing companies in Kenya.

Companies in Kenya, particularly food and beverages are faced with challenges of measuring the performance of their 3PL because they are not able to anticipate the requirements for clearing and removing their cargo from the port and are not able to assess the effectiveness of their logistics providers (Mathenge *et al.*, 2011). A lot of research on this area has been done in other parts of world especially the developed countries but in Kenya very little has been done. For example, a study by Vishal *et al.* (2013) on third party logistical obstacles in manufacturing industries in India revealed that, third party logistics provider's play a vital role in cost reduction, productivity, profits as well as the improvement of the service quality of their customers and thus become important part of logistics performance. Therefore, this study sought to establish whether the findings and conclusions of this study carried out in India may be generalized in Kenya by conducting a study on food and beverage manufacturing companies Kenya.

A study by Ngonela *et al.* (2014), on drivers of logistics outsourcing on tea processing firms in Bomet County found out that logistics outsourcing reduce costs, enable companies to concentrate on their core business activities, reduce risks and gain competitive advantage. Also, the research found out that tea processing firms owned fleet of trucks for transportation instead of outsourcing but the research did not explore the reasons why firms own the fleet of truck instead of outsourcing transportation services which is a non-core activity from logistics firms who are experts in logistics. However, the research findings were limited to Bomet County in Kenya and thus, limiting generalization. The study recommended further research to be carried out in other areas of the country to validate the research findings. This study on the food and beverage manufacturing companies in Kenya would fill this gap. There are many reasons for logistics outsourcing but this study focused on cost, lead-time, service quality and risk assessment being some of the key variables identified in studies by Ngonela *et al.* (2014); Lucie and Hudziak (2012); SoonHu (2010); Mathenge *et al.* (2011) and Vishal *et al.* (2013).

1.3 General Objective of Study

The purpose of this study was to investigate on influence of outsourcing 3PL on the performance of food and beverages manufacturing companies in Kenya.

1.3.1 Specific Objectives

- 1. To determine the influence of cost on the performance of food and beverages manufacturing companies in Kenya.
- 2. To examine the influence of lead-time on the performance of food and beverages manufacturing companies in Kenya.
- 3. To assess the influence of service quality on the performance of food and beverages manufacturing companies Kenya.
- 4. To establish the influence of risk assessment on the performance of food and beverages manufacturing companies in Kenya.

1.4 Research Hypothesis

- **H0**₁: There is a positive significant influence of cost on the performance of food and beverages manufacturing companies in Kenya.
- H0₂: There is a positive significant influence of lead-time on the performance of food and beverages manufacturing companies in Kenya.
- **H0₃:** There is a positive significant influence of service quality on the performance of food and beverages manufacturing companies in Kenya.
- **H04:** There is a positive significant influence of risk assessment on the performance of food and beverages manufacturing companies in Kenya.

1.5 Significance of the Study on Third Party Logistics Outsourcing

There are many reasons that encourage companies to outsource "in-house" businesses to 3PL which among others include to reduce logistics costs, concentrate on core activities, improve customer service level, integrate the entire supply chain, reduce conflict and reciprocate on mutual goal-related matters, increase efficiency, avoid extensive capital expenditures, increase productivity, reduce risk, improve expertise, create a competitive advantage, reduce personnel and equipment costs. Importers in Kenya are faced with challenges of measuring the performance of their supply chain management because they are not able to anticipate the requirements for clearing and removing the cargo from the port and are not able to assess the effectiveness of their logistics providers (Mathenge *et al.*, 2011). Managing one (3PL) provider is easier because it requires fewer internal resources and information is seamlessly coordinated from one logistics activity to the other and thus eliminates disconnects and delays that would occur in case of multiple logistics firms who would hand over from one to another for every logistics activity (Herbert *et al.*, 2007).

The study focused on Third Party Logistics providers because they account for relatively 60% to 80% of the taxes collected by Kenya Revenue Authority in Kenya (Mathenge *et al.*, 2011). In addition, recent data show that about 80% of the Fortune 500 companies surveyed use 3PL services, which comprise a steadily increasing percentage of their logistics operating budget (SoonHu, 2010; Mathenge *et al.*, 2011). This study on influence of outsourcing 3PL providers on the performance of food and beverages manufacturing companies in Kenya would benefit manufacturing companies, management of logistics service providers, government including other regulatory bodies and researchers.

1.5.1 Manufacturing Companies

The study would help supply chain managers in manufacturing firms for better understanding on logistics outsourcing and device mechanisms to ensure efficient and effective delivery of goods and services. This study also highlighted the key performance indicators for measuring and controlling supply chain performance.

1.5.2 Management of Logistics Service Providers

The study would assist the logistics companies to understand major areas of concern for seamless movement of goods and services from the point of origin to the end users. It would also facilitate knowledge of understanding structures to put in place so that they can be competitive in their services. Moreover, the study would give insights on areas that require additional resources in order to improve quality of service. In general it would help logistics providers to formulate policies that would aid effective service delivery for a better and pronounced performance.

1.5.3 Government and other Regulatory Bodies

The study would assist the government to have the holistic approach of ensuring growth and development of logistics providers in supply chain management performance in manufacturing companies in Kenya. The study would provide relevant information that would help the government and other regulatory bodies to formulate and implement such policies that would facilitate effective strategic management on logistics providers. The findings of this study would also help the policy makers to review and develop policies that would guide logistics industry in Kenya.

1.5.4 Researchers

The findings of this study would become useful to forming the basis for future research on the subject, providing a critical examination of the field. The findings would act as a reference point to other researchers in the same field thus facilitating their studies. The researcher would make recommendations on influence of outsourcing third-party logistics providers on the performance of food and beverages manufacturing companies in Kenya and how to gain optimal value through logistics outsourcing and also suggest areas where further studies can be done on the same.

1.6 Scope of Study

The study was confined to 197 food and beverages manufacturing companies in Kenya who are registered members of KAM according to 2015 directory. The study confined on cost, lead-time, service quality and risk assessment and established how they influence performance of food and beverages manufacturing firms in Kenya. The study covered all food and beverages manufacturing companies in Kenya. The Manufacturing sector contributes about 10% of the Kenya's GDP of which the food sector contributes about 33.4% of the total manufacturing production (KNBS, 2015). The food manufacturing sector is therefore a key driver of the economic development and growth in this sector can have a direct and significant impact on the overall Kenya's economy. The study focused on Third Party Logistics providers because they account for relatively for 60% to 80% of the taxes collected by Kenya Revenue Authority in Kenya (Mathenge *et al.*, 2011). In addition, recent data show that about 80% of the Fortune 500 companies surveyed use 3PL services, which comprise a steadily increasing percentage of their logistics operating budget (SoonHu, 2010; Mathenge *et al.*, 2011). Thus, Third Party

Logistics providers play an important role in contributing to Gross Domestic Product (GDP) and the sector dominates the market unlike other logistics parties. Manufacturing companies by the nature of their business require multiple logistics services and such services are offered by Third Party Logistics providers who integrate or bundle together according to the requirements of their customers. This study was conducted in the period between 2015 and 2016.

1.7 Limitations of the study

The study had some limitations. The first limitation was securing the valuable time of respondents to answer to the questionnaires was a big challenge. Therefore the researcher allowed the respondents three weeks to respond to the questionnaires and encouraged the respondents on the benefits and significance of the study. The second limitation was negative reception of the research by some respondents because the research contained information which they considered critical information and confidential to their business and as such some feared that the information could be relayed to their competitors. To address this, the researcher reassured the respondents that information was only for academic purposes and that research content would be shared with them.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review of the study by examining both theoretical and empirical literature from professionals and other researchers on influence of outsourcing of Third Party Logistics Providers in the Performance of Food and Beverage Manufacturing Companies in Kenya. A critical review was brought onboard by deeply assessing reviewed literature in relation to the current study and finally the research gaps were established.

2.2 Theoretical Framework

A theory is a set of interrelated constructs (concepts), definitions and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting phenomena (Camp, 2010). Cooper and Schindler (2008) view a theory as a set of systematic interrelated concepts, definitions, and propositions that are advanced to explain and predict phenomena (facts). In this section, several theories of logistics and supply chain management and their role in logistics were discussed.

2.2.1 The Principal Agency Theory (PAT)

This theory is based on the separation of ownership and control of economic activities between the agent and the principal. Various agent and principal problems may arise including conflicting objectives; differences in risk aversion, outcome uncertainty, behaviour based on self-interest, and bounded rationality. The contract between the principal and the agent governs the relationship between the two parties, and the aim of the theory is to design a contract that can mitigate potential agency problems (Herbert *et al.*, 2007). The "most efficient contract" includes the right mix of behavioral and

outcome-based incentives to motivate the agent to act in the interests of the principal (Logan, 2000). Creating contracts with supply chain partners that balance rewards and penalties, misalignment can be mitigated (Narayanan & Raman, 2004; Baiman & Rajan, 2002).

Balancing the need of the shipper and the capability of the TPL provider is a well-known managerial issue that explicitly implies the risk of agency problems (Hertz & Alfredsson, 2003). The PAT suggests an "inter-firm contracting perspective" on TPL, focusing on the design of an efficient contract between the buyer and seller of logistics services. The idea is to develop the most efficient combination of outcome and behavioral incentives in the contract between the shipper and the TPL provider (Herbert et al., 2007). The extent to which the TPL provider's performance can be measured and controlled has a great effect on whether the provider is paid by actual performance (such as number of orders picked, packed, and shipped to the customers) or according to behavioral outcomes (such as salaries, hours, and/or miles). Not all aspects can be covered ex ante in the contract. Therefore, the issue of contracting should be a revisiting issue in TPL relationships (Herbert et al., 2007). Thus, the food and beverages manufacturing firms can use the PAT theory to mitigate on logistics risks and achieve the optimal value of the outsourced services from the 3PL firms. Because theory provides a useful tool to respond to transaction cost dilemmas through contractual and non-contractual remedies in logistics, it is critical for managers to understand and mitigate logistics challenges associated with behaviour uncertainty, relationship management, collaboration and uncertainty in logistics management.

2.2.2 The Transaction Cost Analysis (TCA)

For a business to choose whether to perform a particular activity, transactional cost analysis becomes very important. The theory uses transaction as the unit of analysis and divides transaction costs into production and co-ordination costs. According to the theory, transaction costs arise at contracting (drafting, negotiation and safeguarding) or at implementation (mal-adoption, haggling and establishment, operational and bonding costs). Decision makers must weigh and compare the costs associated with executing a transaction within their firms (in-house) and outsourcing. The foundations of TCA were laid down by Coase (1937) and were further developed by Williamson (1992; 1994). Fundamentally, TCA suggests that transaction costs related to make or buy decision impact the choice between the firm and the market. The transaction costs analysis helps in deciding whether to perform activity in-house or outsource from third party. According to TCA, there are five determinants of transaction costs, namely transaction frequency, asset specificity, uncertainty, bounded rationality, and opportunistic behavior.

Transaction frequency is how often the parties involved in a contract interact. Asset specificity refers to the idiosyncratic investments in a partnership that cannot be redeployed such as training and special equipment. Uncertainty may be further divided into environmental uncertainty and behavioral uncertainty. Environmental uncertainty refers to circumstances surrounding an exchange that cannot be specified ex-ante and behavioral uncertainty refers to the difficulty in verifying whether compliance with established agreements has occurred (Yazdanparast, Manuj & Swartz, 2010). Bounded rationality means that decision makers have a constraint on their cognitive capabilities (or have limited information processing ability) and limits on their rationality. Opportunism states that given the opportunity, decision makers may unscrupulously seek to serve their self-interests and it is difficult to know a priori who is trustworthy and who is not (Yazdanparast *et al.*, 2010). From the viewpoint of resources and time investments in a relationship, the characteristics of a transaction can help us in identifying the mode of governance.

However, development of close and enduring inter-organizational ties such as through information sharing and joint planning has been suggested as a substitute for vertical integration (Palay, 1984; Noordewier *et al.*, 1990; Payan, 2007). Development of close relationships is particularly significant consideration in a logistics context because there is growing trend toward outsourcing of logistics services and users of outsourced logistics services want to maintain tight relationships with providers so that they do not

lose touch with their end customers. In addition to vertical integration, TCA has been employed to investigate vertical inter-organizational relationships (Heide & John, 1992; Sriram *et al.*, 1992) and horizontal inter-organizational relationships (Gates, 1989; Osborn & Baughn, 1990; Parkhe, 1993). This is interesting because logistics service provider may be playing both roles in a relationship.

By reducing the supplier base of transport firms and entering into close and long-term cooperation with a few key operators, a firm may reduce the transaction costs related to collecting information about numerous suppliers, the costs of negotiating and writing a contract, and the enforcement costs after the negotiation of a contract (Payan, 2007; Herbert *et al.*, 2007). However, close cooperation also involves the risk of opportunistic behavior. Therefore, it might be necessary to incorporate "safeguards" and "credible commitments" into TPL agreements, such as penalty clauses related to poor delivery performance, joint investments in dedicated warehouses or equipment, joint training programs, and exchange of employees between the firms (Herbert *et al.*, 2007). Therefore, this theory was relevant in providing understanding to managers of food and beverages manufacturing companies in Kenya because they can refer to it to make effective outsourcing decisions for 3PL providers.

2.2.3 The Network perspective Theory (NT)

The performance of a firm depends not only on how efficiently it cooperates with its direct partners, but also on how well these partners cooperate with their own business partners in cooperative relationships. The firm's continuous interaction with other players becomes an important factor in the development of new resources (Herbert *et al.*, 2007). Relationships combine the resources of two organizations to achieve more advantages than through individual efforts. Such a combination can be viewed as a quasi-organization (Haakansson & Ford, 2002). The value of a resource is based on its combination with other resources, which is why interorganisational ties may become more important than possessing resources per se.
The network theory (NT) contributes profoundly to an understanding of the dynamics of inter-organisational relations by emphasizing the importance of "personal chemistry" between the parties, the build-up of trust through positive long-term cooperative relations and the mutual adaptation of routines and systems through exchange processes (Herbert et al., 2007). Through direct communication, the relationships convey a sense of uniqueness, ultimately resulting in supply chains as customization to meet individual customer requirements. The parties gradually build up mutual trust through the social exchange processes. Links between firms in a network develop through two separate, but closely linked, types of interaction: exchange processes (information, goods and services, and social processes) and adaptation processes (personal, technical, legal, logistics, and administrative elements). Network theory is descriptive in nature and has primarily been applied in logistics and SCM to map activities, actors, and resources in a supply chain. The focus has been on developing long-term, trust-based relationships between the supply chain members. Examples of issues include third party logistics (Halldorsson, 2002), and management roles in supply networks (Harland & Knight, 2001).

To TPL, the NT presents openness and trust between the parties as a condition for gaining the best possible results from cooperation (Herbert *et al.*, 2007). Over time, mutual adjustments improve administrative and logistical systems, making them more efficient. By entering into close cooperation with TPL providers who possess complementary competencies, the individual firm is able to utilize resources and skills controlled by other players (Haakansson & Ford, 2002). In close and long-term cooperation, the parties are able to establish mutual and strong relations of trust, which may result in the elimination of cost (Parkhe, 1993; Herbert *et al.*, 2007). Thus, managers of food and beverages manufacturing companies in Kenya need to ensure efficient and effective cooperative integration of all logistics activities to gain competitive advantage from the 3PL providers by managing their lead-time.

2.2.4 Resource Based View Theory (RBV)

This theory states that firms earn sustained competitive advantage because they have access to strategic resources. These resources have unique characteristics which are rare, valuable, cannot be imitated, and have no close substitute. When these conditions are met, competitive advantage is created. This theory deals with competitive advantages related to the firm's possession of heterogeneous resources (financial, physical, human, technological, organizational, and reputational) and capabilities (combination of two or more resources) (Grant, 1991). These resources and capabilities constitute the core competence of the particular firm and serve ultimately as its source of competitive advantage (Herbert *et al.*, 2007).

The RBV consider a firm's core competence to be its ability to react quickly to situational changes and build further competencies or dynamic capabilities (Eisenhardt & Martin, 2000). Hence, a firm's competitiveness is associated with the configuration of resources and capabilities as the markets evolve. However, inter-organizational relationships may also facilitate and advance the learning processes of individual firms. As such, relationships are not only output-oriented but also learning oriented (Grant, 1991; Herbert *et al.*, 2007). Efficiency may not only be explained in terms of productivity or operational measures, but also in terms of the opportunity to access another firm's core competencies through cooperative arrangements as an alternative to building such competencies in-house (Haakansson *et al.*, 1999). Often, outsourcing decisions are based on the idea of focusing on core competencies and outsourcing of standard components and processes enables manufacturing firms to achieve their competitive edge.

Resources and capabilities can only be acquired from the market to a limited degree. Under certain circumstances, firms in the supply chain interact closely on a long-term basis exchanging confidential information. Hence, TPL is both a means of improving the logistics services of the TPL buyer and a way to achieve a mutual transfer of logistics experience (Herbert *et al.*, 2007). A long-term mutual commitment and adjustments as well as a customized rather than standardized solution contribute to the uniqueness and heterogeneity of logistics resources and capabilities. Resource based view could help manufacturing firms to understand how to use TPL to shortcut an upcoming need for competence configuration. The primary aim of every company is to maximize the overall value generated throughout logistics process. Success criteria of a generic supply chain should be measured for the overall chain profit, not at any specific level of the chain, because sticking to a portion of the chain not only makes no commitment to maximizing overall chain profit but also reduces the whole supply chain profitability (Eisenhardt & Martin, 2000). Therefore, food and beverages manufacturing firms should be able to evaluate 3PL providers to ensure that they choose competent companies to handle their logistics activities.

2.3 Conceptual Framework

A conceptual framework is a model of presentation where a researcher conceptualizes or represents the relationships between variables in the study and shows the relationship graphically or diagrammatically. Mugenda (2008) and Orodho (2008) define a variable as a measurable characteristic that assumes different values among units of specific population. The independent variable of the study will be cost, lead time, service quality and risk assessment; while the dependent variable will be the performance of food and beverages manufacturing companies in Kenya.



Independent Variables

Figure 2.1: Conceptual framework

2.4 Review of literature on Variables

2.4.1 Cost in the Performance of Food and Beverages Companies in Kenya

The decision on whether to perform logistics activities in-house or outsource from 3PL providers depend on evaluation of cost or service trade-offs. One important determinant of the decision is cost comparison between alternative options (Selviaridis & Spring, 2007). Costs associated with performing logistics activities in-house and investment in capital assets is traded-off against service provider fees and the lowest cost solution

should then be selected (van Damme & Ploos van Amstel, 1996). However, cost is not the single most important decision variable and logistics service issues are also considered (La Londe & Maltz, 1992; McGinnis *et al.*, 1995). For instance, Maltz (1994a) examined the relative impact of cost and service on the decision to outsource warehousing and found that organisations were reluctant to use third-party warehousing due to customer service considerations.

The decision to contract-out logistics can also be driven by resource and capability considerations (Bolumole, 2001). Forming relationships with 3PL providers is an efficient and effective means of achieving the required service without investing heavily in assets and new capabilities (Persson & Virum, 2001; Stank & Maltz, 1996). In this way, firms can focus on their core business. Furthermore, changes in the business environment, increased competition, pressure for cost reduction and the resulting need to restructure supply chains are often quoted as motives for the formation of alliances with 3PL providers (Bagchi & Virum, 1996; Laarhoven, Berglund & Peters 2000).

Logistics outsourcing offers many cost-related advantages such as reduction in asset investment (turning fixed cost into variable), labour and equipment maintenance costs (Bardi & Tracey, 1991). Third party logistics providers serve multiple customers and are able to utilize capacity better and spread logistics costs, thus achieving economies of scale (van Damme & Ploos van Amstel, 1996). However, cost reduction is not always realized due to unrealistic fee structures proposed by service providers (Ackerman, 1996); and even if realised, it can be offset by the provider's margin (Wilding & Juriado, 2004). Cost savings evaluation can be difficult due to the firms' lack of awareness of internal logistics costs. Indeed, the outsourcing option may be chosen in order to give an indication of in-house costs and serve as an external benchmark for logistics efficiency (van Laarhoven *et al.*, 2000). One of the objectives of the study was to determine the role of cost in the performance of food and beverages manufacturing companies in Kenya.

2.4.2 Lead-Time in the Performance of Food and Beverages Companies in Kenya

In manufacturing companies, lead-time is important because it sets the timelines for delivery of materials to production schedule. Lead-time is the total time that elapses between an order's placement and its receipt. It includes the time required for order transmittal, order processing, order preparation, and transit (Treville, Shapiro, & Hameri, 2004; Christopher (1992). According to Stewart (1995), an increase in delivery performance is possible through a reduction in lead-time attributes such as on-time delivery, on time orders fill and order completeness. Another aspect of delivery is the percentage of finished goods in transit, which if high signifies low inventory turns, leading to unnecessary increases in tied up capital. Various factors that can influence delivery speed include vehicle speed, driver reliability, frequency of delivery, and location of depots. An increase in efficiency in these areas can lead to a decrease in the inventory levels (Novich, 1990). By comparing these with the previously made agreement, it can be determined whether perfect delivery has taken place or not, and areas of discrepancy can be identified so that improvements can be made. Flexibility of delivery systems to meet particular customer needs can be achieved by meeting a particular customer delivery requirement at an agreed place, agreed mode of delivery and with agreed upon customized packaging. This type of flexibility can influence the decision of customers to place orders, and thus can be regarded as important in enchanting and retaining customers (Novich, 1990).

Lead-time has serious effects on the coordination among logistics partners and thus a key aspect in logistics service. Therefore, lead-time reduction can be viewed as a coordination enabler in supply chain. In some studies, lead time reduction has been viewed as an investment strategy. Lead-time reduction is considerably emphasized in waste reduction, especially in excess inventory. Time-based competition is a competitive strategy and it can be achieved by lead-time reduction. Time-based competition is emphasized in literature solely based on speed and is directly derived from lead time reduction. Nevertheless, another aspect of time-based competition may be the monotonic

filling of the orders, which means uniform response time of received orders. This latter aspect of time-based competition can be considered by lead time variance reduction (Forrest, *et al.*, 2008). Lead-time uncertainty reduction can be viewed like lead-time reduction because it will promote the responsiveness of the chain by providing products to the customers in less uncertain supply time. The key to successful outsourcing of logistics services lies in finding a 3PL provider that has the most strategic fit with the company's goals.

2.4.3 Service Quality in the Performance of Food and Beverages Companies in Kenya

Service quality is determined by comparison of the customer expectations against the perceptions of service offered. According to Parasuraman, Berry and Zeithmal, (1985), ten dimensions of service quality are listed as: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the customer and tangibles. Service quality is customer perception of how well a service meets or exceeds expectations. Service quality is commonly noted as a critical prerequisite and determinant of competitiveness for establishing and sustaining satisfying relationships with customers. Attention to service quality can make an organization different from other organizations and gain a lasting competitive advantage.

The delivery of high-quality logistics services includes functional aspects such as timeliness and ordering procedures and technical aspects such as order accuracy and order condition (Gronroos, 1984; Davis & Mentzer, 2006). The level of performance with respect to both aspects should be based on an accurate assessment of what the customer truly values. Traditionally, logistics managers have attempted to assess their performance through an "operational focus" by relying on internally generated measures and using the measurement of quality to infer customers' opinions of the provided service (Davis & Mentzer, 2006). In pursuing operational excellence, logistics managers have often overlooked an outward orientation toward customers that calls for competing on superior customer value delivery (Woodruff, 1997). More recently, the 2009

Fourteenth Annual Third-Party Logistics (3PL) Study (Langley, Newton & Tyndall, 2009) suggests that one of the major issues identified by the shippers (or the receivers of logistics services) is the lack of continuous, ongoing improvement in the offered services by their providers and the fact that providers are not proactively communicating suggestions for service improvements.

Parasuraman *et al.* (1985) propose a service quality model with five dimensions namely tangibility, reliability, responsiveness, assurance, and empathy. Tangibility involves the appearance of physical facilities including the equipment, personnel, and communication materials. Reliability involves the ability to perform the promised service dependably and accurately. Responsiveness entails the willingness to help customers and providing prompt services. Assurance involves knowledge and courtesy of staff and ability to inspire trust and confidence. Finally empathy involves the provision of caring, individualised attention to customers' needs as shown in Table 2.1.

Dimension	Description	Specific criteria that customers use
Reliability	Ability to perform service dependably and accurately	TimelinessConsistencyAccuracy
Assurance	Knowledge and courtesy of staff; ability to inspire trust and confidence	 staff competence respect for customers credibility safety and security confidentiality
Tangibility	Physical representation or image of the service	 physical facilities equipment technology employee appearance communication materials
Empathy	Caring and individualised attention to customers	 individualised attention appropriate service for customer needs clear and timely communication access to information, staff and services
Responsiveness	Willingness to help customers and provide prompt services	 willingness to help prompt attention to requests problem resolution flexibility complaint handling

Table 2.	.1: Th	e Five	Service	Quality	Dimensions	(Parasuraman	et al.,	1985)
						`		

When services are outsourced, the quality of services should be measured against the standards (Compbell, 1995; Anderson, 1997). The only way a firm can gain competition advantage is to outsource requirements so that the outsourcing will help to compete with others. Therefore quality is a relevant factor and can be either a positive or a negative influence on outsourcing.

2.4.4 Risk Assessment in the Performance of Companies

Risk is an uncertainty or a potential financial loss inherent in an investment decision. It is a possibility of an outcome deviating from the expected earnings. Risk is an activity or undertaking that may have an adverse impact on the achievement of an objective such as outsourcing objective (Lysons & Farrington, 2006). Risk assessment is a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking. Risk assessment is the process of identifying, analysing and evaluating hazards or uncertainties and determination of the likelihood of occurrence of each risk factor (Tummala, & Schoenherr, 2011).

Outsourcing a 3PL provider may introduce or reduce risk to the business of the appointing company. Risk assessment is therefore concerned with identifying and evaluating all potential risks in outsourcing 3PL providers. The assessment process allows the risk taker (3PL providers) to develop a risk matrix based on probability of occurrence or vulnerability and device methods to mitigate or safeguard the impact. Risk assessment is synonymous with the assessment of uncertainties and is concerned with the determination of the likelihood of each risk factor (Tummala, & Schoenherr, 2011). Outsourcing may adversely affect company's performance by increasing its operating costs which include staff training to monitor and communicate the performance of 3PL (Ellramet *et al.*, 2008). The probability of the anticipated risk occurring or not occurring at all is a matter of the judgement of the risk assessor on the outsourced company.

Through risk assessment, logistics outsourcing can be seen as a way of reducing a company's risk by sharing it with suppliers or service providers. Investment in logistics equipment and networks always incorporates a great deal of risks (Ellramet *et al.*, 2008). The volatility of Markets, cut-throat competition, bureaucratic government regulations, restrictive financial conditions and technological advancements all change extremely quickly and keeping up with these changes is risky, especially when it requires a

significant investment. By outsourcing company can spread its risks across a number of suppliers (Quinn & Hilmer, 1995).

For example, in the case of Argyle Diamonds which is one of the world's largest diamond producers, it decided to outsource almost all of its operations, except the critical steps of separation and sorting diamonds. All huge earth-moving operations were outsourced to avoid capital and labor risks. Housing and food services for workers were outsourced to avoid confrontations with non-operating issues and much of the distribution were outsourced to finance inventories to avoid the complications of owning worldwide distribution channels. By outsourcing to best-in-class suppliers in each case, Argyle Diamond was able to spread the risk and also improved quality and image of its company (Quinn & Hilmer, 1995).

In addition, when companies outsource some services from experts they benefit because service providers are better placed in making accurate estimates and providing better alternatives (Corbett, 1998). The outsourced 3PL providers undertake to invest in equipment, networks and resources to provide the service thereby sharing risks with its clients (Quinn, 1999). Companies outsource specialized or risky services to share risk with their contractors (3PL), especially where the capacity and precision of service execution is critical to the company (Campbell, 1995).

Outsourcing of Third party Logistics providers play a crucial role in spreading logistics risk and it is important for a company to select the right 3PL providers from the beginning. In order to qualify for appointment, the 3PLs providers should possess the necessary processes, quality, technology, employees and equipment (Kumar & Eichhoff, 2005). Lonsdale and Cox (1998) suggest that 3PLs providers selection must be carried out by use of a cross functional team that ensures that all aspects are taken into account. There are no universal selections criteria for 3PLs providers but instead, factors depend on the objectives that are sought for (Lonsdale & Cox, 1998). The selection of 3PL providers maybe be based on various factors including; previous performance, capacity, cost, lead-time, risk assessment, quality and among others (Aron *et al.*, 2005). Through

risk assessment, a company is able to reveal the risks associated with logistics service provision and put in place appropriate mitigating measures.

Risk identification involves a comprehensive and structured determination of potential logistics risks associated with a given problem. The affected areas are clearly identified and possible consequences are agreed so that risk mitigation strategies can be implemented. Care should be taken since some strategies may adversely affect other risks (Chopra & Sodhi, 2004). Understanding the variety and interrelationships of potential logistics risks is therefore important as well. Various approaches may help in the identification of potential logistics risks which include; logistics mapping, checklists or check sheets, event tree analysis, fault tree analysis, failure mode and effect analysis (FMEA) and Ishikawa cause and effect analysis (CEA) (Tummala & Schoenherr, 2011).

Risk measurement involves the determination of the consequences of all potential logistics risks, together with their magnitudes of impact. Consequences are defined as the manner in which or the extent to which the threat manifests its effects upon the resources (Crockford, 1986). Manifestations may include loss of or damage to assets, loss of income, interruption of service levels, cost overruns, schedule delays, poor process performance, liabilities incurred, damage repair costs, or injuries.

Risk evaluation involves the sub-steps of risk ranking and risk acceptance. Risk ranking is applied based on the determination of risk exposure values for each identified logistics risk. Once the logistics risks are classified, acceptable levels of risk must be established. Cross-functional teams, including senior management, must be involved, and all available relevant information should be used in establishing these criteria. Based on these guidelines the demarcation between acceptable and unacceptable logistics risks can be defined (Tummala, & Schoenherr, 2011). The outcome of this risk assessment forms the basis of appointing or failing to appoint a 3PL provider.

2.4.5 Performance of Food and Beverages Companies in Kenya

Today's marketplace is shifting from individual company performance to entire chain's ability to effectively and efficiently meet the end-customer needs through product availability, responsive and on-time delivery. Logistics and supply chain management has continued to become more widely recognized because of its importance to the survival of companies. In recent years, company's performance measurement and metrics have received much attention from researchers and practitioners (Gunasekaran et al., 2003). The role of these measures and metrics in the success of a company cannot be overstated because they affect strategic, tactical and operational planning and control (Gunasekaran *et al.*, 2003). Logistics activities cover the entire supply chain so they become important in improving company's overall performance (Zaryab & Shafaq, 2014). The efficient flow of international trade relies on a range of skilled service providers working together effectively, including shipping lines, port terminal operators, customs officials, operators of off-dock container yards, land transport agents and clearing and forwarding (C&F) agents (Mathenge et al., 2011). Outsourcing logistics functions has a direct bearing on the company's ability to meet its commitments to customers and shareholders (Ngonelam et al., 2014). Cost and service represent the most important criteria in logistics outsourcing decisions (SoonHu, 2010). With increased competition and shrinking market, most businesses are very keen on cost and finding the shortest route to the market.

Performance measurement systems appear to be instrumental for assessing the extent of 3PL provider success and identifying corrective action in case of service failures (van Hoek, 2001; Wilding & Juriado, 2004). The establishment and continuous monitoring of key performance indicators (KPIs) related to logistics services allows users to compare achieved with expected service levels. Examples of such measures include delivery timeliness and accuracy, order fill rates and inventory turns (Wilding & Juriado, 2004). Performance metrics can also be used by Logistic Service Providers for benchmarking purposes (Stank & Patrick, 1998; Sum & Teo, 1999). Additional practices for

management and control of 3PL relations include carrying out customer satisfaction surveys, gaining access to Logistic Service Providers' information systems, jointly planning and implementing performance improvement processes and organising 3PL forums where the client company shares information with regard to logistics strategy objectives (Boyson *et al.*, 1999; Wilding & Juriado, 2004). The role of IT systems as safeguarding mechanisms in the shipper-3PL provider relationship has been stressed by Bourlakis and Bourlakis (2005).

The measurement of organizational performance is not easy for business organisations with multiple objectives of profitability, employee satisfaction, productivity, growth, social responsibility and ability to adapt to the ever changing environment among other objectives (Waiganjo, 2013). Although performance has been traditionally conceptualized in terms of financial measures, some scholars have proposed a broader performance concept that incorporates non-financial measures including among others market share, product quality, and company image (Waiganjo, 2013). In this study company performance would be measured using market share and profitability.

2.5 Empirical Review

A study by Yazdanparast *et al.* (2010) on logistics service value through the theoretical lens of service-dominant logic with a focus on the creation of logistics value jointly by the provider and the customer found out that, the process of co-creation of value in a logistics context has three phases: learning, innovation and execution, and outcomes. These phases and their key elements are integrated into a comprehensive framework of co-creation of logistics service value. A total of 12 propositions were offered to describe the process for achieving competitive advantage through co-creation of logistics service value.

A study by Vishal *et al.* (2013) on third party logistical obstacles in manufacturing industries revealed that, third party logistics provider's plays vital role in cost reduction, productivity, profits as well as the improvement of the service quality of their customers

and thus become important part of supply chain management. Successful logistics outsourcing can provide significant benefits, both, to industries and third party logistics providers. The outsourcing of logistics activities, manufacturing industries can save on capital investments, and. reduce financial risks. The objectives and concerns related to TPL logistics outsourcing are cost reduction, improvement of delivery time, achieving quality service, risk assessment, concentration on core competencies, increasing flexibility and concerns are loss of control, dependence on service provider, losing direct customer contact. The main challenges for TPL services providers are to maintain relationship with customers at the same time to earn profits under price pressures from customers also delivering the services in different geographical regions. Third party logistics providers have an opportunity of growth in technology, management solutions, IT sectors and the Physical Services such as Freight carriage. As far as Indian manufacturing industries are concerned, there is wide scope for TPL service providers to earn the maximum profit along with satisfying customers need.

A study by Ngonela *et al.* (2014) on the drivers and practices of logistics outsourcing practices among tea processing firms in Bomet County found out that the firms use several logistics outsourcing practices with own or in-house transport being the most common. All the tea processing firms that were surveyed outsourced some of their logistics functions though at varying degrees. Logistics outsourcing among the tea firms was most prevalent in operations such as warehousing, fleet management, fleet operations, transport and distribution. The study concluded that there exists a drive towards the use of logistics outsourcing as a strategy to reduce costs, to pursue core business activities, reduce risks and gain competitive advantage. The survey also established some of the challenges faced by the firms as they moved to outsource their business activities; these included loss of control of the activities, loss of employee loyalty, industrial unrests, switching costs, loss of information to competitors and resistance to change by the stakeholders.

Forrest *et al.* (2008) in their study on the role of a third-party logistics provider revealed that with the increasing focus of business expansion into the global market, companies need to have an extremely lean, efficient supply chain to achieve successful integration into new markets. Third party logistics providers can assist companies to cut operational costs and focus on core competencies. The study further established that there are many advantages for outsourcing logistics services to third parties as the amount of services being offered by logistics providers continues to grow each year. The study also revealed that 3PL are becoming involved in the long-term strategic direction of their client companies. The key to successful outsourcing of logistics services lies in finding a 3PL provider that has the most strategic fit with the company's goals.

Nemoto and Tezuka (2002) in their study on advantage of third party logistics in supply chain management revealed that joint usage of SCM and 3PL should be promoted because of their positive interactive effects. When firms intend to introduce SCM, it would be beneficial to outsource logistics activities and utilize a 3PL provider. However, the study could not fully clarify the relationship between e-logistics usage and the e-manufacturer or e-retailer because of lack of IT integration systems and its implications on SCM and 3PL, partly owing to insufficient experiences.

Lucie and Hudziak (2012) in their study on addressing quality problems in 3PL processes, it was revealed that as a consequence of technology developments and globalization, shippers are increasingly outsourcing their logistics activities to third party logistics providers whose activities efficiency and effectiveness are responsible for the success of shippers' business. At the same time, shippers decrease the number of 3PLs they use making the competition tougher for logistics providers. To enable 3PLs to stay competitive, the study revealed that 3PLs can improve their customers' satisfaction by studying their operational processes from a Lean perspective. Further, the research showed that Lean is applied in manufacturing and service environments to enable decrease operational costs and increase customer satisfaction.

2.6 Critique of the Existing Literature

A study by Yazdanparast et al. (2010) on logistics service value through the theoretical lens of service-dominant logic with a focus on the creation of logistics value jointly by the provider and the customer found out that the process of co-creation of value in a logistics context has three phases: learning, innovation and execution, and outcomes. These phases and their key elements are integrated into a comprehensive framework of co-creation of logistics service value. A total of twelve propositions were offered to describe the process for achieving competitive advantage through co-creation of logistics service value. However, the proposed framework for co-creating value in logistics context was limited in its scope for explaining the mechanics of each phase as well as establishing causal links. It is suggested that while the framework is well supported by the extant literature, it can be further developed through an organized program of qualitative and quantitative research to develop and test the associated models. Further, the research recommended that qualitative and quantitative research is required in order to uncover and identify elements that are not yet included in the proposed framework, as well as the discovery of additional theoretical underpinnings to advance knowledge on the subject.

A study by Vishal *et al.* (2013) on third party logistical obstacles in manufacturing industries revealed that, third party logistics provider's plays vital role in cost reduction, productivity, profits as well as the improvement of the service quality of their customers and thus become important part of supply chain management. Successful logistics outsourcing can provide significant benefits, both, to industries and third party logistics providers. The outsourcing of logistics activities, manufacturing industries can save on capital investments, and. reduce financial risks. The objectives and concerns related to TPL logistics outsourcing are cost reduction, increase of delivery time, concentration on core competencies, increasing flexibility and concerns are loss of control, dependence on service provider, losing direct customer contact. The main challenges for TPL services providers are to maintain relationship with customers and at the same time to earn

profits under price pressures from customers also delivering the services in different geographical regions. Third Party Logistics providers have an opportunity of growth in technology, management solutions, IT sectors and the Physical Services such as Freight carriage. As far as Indian manufacturing industries are concern, there is wide scope for TPL service providers to earn the maximum profit along with satisfying customers need. However, the research instruments were not validated and thus, the findings and conclusions cannot be generalized in the manufacturing sector in Kenya. Also, from research it shows that there is limited application of theory in SCM. The lack of theory application may have limited our ability to understand SCM in manufacturing firms and its related variables as well as the relationships between them. It also makes the generalization of research findings from one context to another difficult.

A study by Ngonela et al. (2014) on the drivers and practices of logistics outsourcing practices among tea processing firms in Bomet County found out that the firms use several logistics outsourcing practices with own or in-house transport being the most common. All the tea processing firms that were surveyed outsourced some of their logistics functions though at varying degrees. Logistics outsourcing among the tea firms was most prevalent in operations such as warehousing, fleet management, fleet operations, transport and distribution. The study concluded that there exists a drive towards the use of logistics outsourcing as a strategy to reduce costs, to pursue core business activities, reduce risks and gain competitive advantage. The survey also established some of the challenges faced by the firms as they moved to outsource their business activities; these included loss of control of the activities, loss of employee loyalty, industrial unrests, switching costs, loss of information to competitors and resistance to change by the stakeholders. However, the research found out that tea processing firms still owned fleet of trucks for transportation instead of outsourcing but the research did not explore the reasons why firms own the fleet of truck instead of outsourcing non-core activities from logistics firms who are experts in logistics. Also the research findings are limited to one county in Kenya and thus, limiting generalization.

Forrest *et al.* (2008) in their study on the role of a third-party logistics provider, it revealed that with the increasing focus of business expansion into the global market, companies need to have an extremely lean, efficient supply chain to achieve successful integration into new markets. Third party logistics providers can assist companies to cut operational costs and focus on core competencies. The study further established that there are many advantages for outsourcing logistics services to third parties as the amount of services being offered by logistics providers continues to grow each year. The study also revealed that 3PL are becoming involved in the long-term strategic direction of their client companies. The key to successful outsourcing of logistics services lies in finding a 3PL provider that has the most strategic fit with the company's goals. In addition, from the research conclusion, companies need to have an extremely lean, efficient supply chain and 3PL providers can help companies cut operational costs.

Nemoto and Tezuka (2002) in their study on advantage of third party logistics in supply chain management revealed that joint usage of SCM and 3PL should be promoted because of their positive interactive effects. When firms intend to introduce SCM, it would be beneficial to outsource logistics activities and utilize a 3PL provider. However, the study could not fully clarify the relationship between e-logistics usage and the e-manufacturer or e-retailer because of lack of IT integration systems and its implications on SCM and 3PL, partly owing to insufficient experiences. Also, the research findings cannot be validated because the research did not disclose the methodology used.

Lucie and Hudziak (2012) in their study on addressing quality problems in 3PL processes revealed that as a consequence of technology developments and globalization, shippers are increasingly outsourcing their logistics activities to third party logistics providers whose activities efficiency and effectiveness are responsible for the success of shippers' business. At the same time, shippers decrease the number of 3PLs they use

making the competition tougher for logistics providers. To enable 3PLs to stay competitive, the study revealed that 3PLs can improve their customers' satisfaction by studying their operational processes from a Lean perspective. Further, the research showed that Lean is applied in manufacturing and service environments to enable decrease operational costs and increase customer satisfaction. Further, the study established that nowadays 3PLs are increasingly getting involved in SCM as shippers continue to reduce the number of logistics provider they use. However, the study did not establish qualitatively and quantitatively the cause of this trend.

2.7 Research Gaps

From the above literature reviewed, studies such as Lucie and Hudziak (2012); Nemoto and Tezuka (2002) and Forrest *et al.* (2008) were not supported by supply chain theories. The lack of theory application could have limited our ability to understand contribution of 3PL in company's performance. It also made the generalization of research findings from one context to another difficult. It is therefore important that the 3PL research literature makes greater use of supply chain theories to improve our understanding of the phenomenon. Further, most of the study findings were not quantitatively validated and therefore, they limit the generalization.

In the Kenyan context, influence of outsourcing 3PL in the performance of food and beverages manufacturing companies was not fully explored and there was lack of a guiding framework on how manufacturing firms should embrace use of 3PLs. The majority of the studies on 3PL had been carried out in developed countries. A study by Mathenge *et al.* (2011) on the role of clearing and forwarding agents in reforming East Africa Community logistics sector found that firms in Kenya are faced with challenges of measuring the performance of their companies because they are not able to anticipate the requirements for clearing and removing the cargo from the port and are not able to assess the effectiveness of their logistics providers. However, the study did not provide solutions to the problems identified. According to Selviaridis and Spring (2007); Tian *et al.* (2010), more research is necessary to provide a better understanding on how 3PL

providers contribute to improving company's performance. Therefore, this study sought to fulfill these gaps by investigating on influence of outsourcing 3PL providers in the performance of food and beverages manufacturing companies in Kenya.

2.8 Summary

Nowadays, there is increasing number of companies focusing their efforts on their core competencies and outsourcing their logistics functions to one or more logistics providers. The extent to which a firm may effectively control an outsourced logistics business will greatly be determined by the information received and the early detection of problems (Vishal et al., 2013). Third party logistics providers have a significant impact on not only the past and the present, but also the future because cost is a primary motivator and 3PL has evolved into a strategic partner in company's performance. Third Party Logistics providers are not merely a means to make the supply chain operation effective and efficient, but also a strategic tool for creating competitive advantage through increased service and flexibility. To become successful in an intense competitive environment, 3PL providers should device new strategies of resolving logistics problems by developing skills, competencies and value-added activities. Nowadays, 3PLs are putting more attention on building a long-term contractual relationship with their customers by providing lead time logistics services. In other parts of the world especially the developed countries a lot of research has been done in this area, but there is scanty literature in Kenya. Therefore there is a need to conduct research in the outsourcing of 3PL providers in Kenya to understand their benefits in the performance of companies.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a systematic description of the methodology which was used to conduct the research. It comprises of sections on research design, population, sampling frame, sample and sampling technique, instruments, data collection procedure, pilot test, data processing and measurement variables.

3.2 Research Design

Research design refers to a detailed outline of how the overall strategy integrates the different components of the study in a coherent and logical way to effectively address the research problem. It is the plan on how to answer research questions (Saunders, Lewis & Thornhill, 2007). This study adopted cross-sectional survey design using both quantitative and qualitative approaches. Quantitative approach emphasizes measurement and data is analyzed in a numerical form to give precise description. According to Mugenda (2008), quantitative approach also known as the scientific method has traditionally been considered as the traditional mode of inquiry in both research and evaluation. Quantitative approach places emphasis on methodology, procedure and statistical measures to test hypothesis and make predictions. Qualitative research helps in analyzing information in a systematic way in order to come to some useful conclusions and recommendations on the social settings and the individuals who portray those characteristics. Cross-sectional survey design was adopted for this study. Cross-sectional survey design helps in hypothesis formulation and testing the analysis of the relationship between variables (Kothari, 2004).

3.3 Target Population

A population is the total of all the individuals or items that have certain characteristics which are of interest to a researcher. Mugenda (2008) describes target population as a complete set of individual cases object with some common characteristics to which researchers want to generalize the result of the study. The target population of this study was 197 registered food and beverages manufacturing companies in Kenya as per KAM Directory 2015. Food sector constitute about a third of the manufacturing sector in Kenya (KAM Directory 2015) and the sector adds value to agricultural produce and therefore growth of this sector can have a direct significant impact on the whole Kenya's economy. The researcher chose supply chain managers and procurement officers from each of the Food and beverages manufacturing companies who responded to the study.

3.4 Sampling Frame

This frame defines a researcher's population of interest. A sampling frame is a list of all items where a representative sample is drawn for the purpose of research (Mugenda, 2008). In this study, the sampling frame was a list of all 197 registered Food and Beverages Manufacturing Companies in Kenya (KAM Directory, 2015). These manufacturing firms are located in Nairobi, Mombasa, Kisumu, Thika, Nakuru, Eldoret, Kericho, Nyeri, Ruiru and other 16 towns with less than three firms. The sampling frame was obtained from the directory of Kenya Association of Manufacturers and exporter (KAM Directory, 2015).

3.5 Sample and Sampling Technique

3.5.1 Sample Size

A sample is a portion or part of the population of interest. Wiersma (2008), states that an ideal sample should be large enough so that the validity and reliability of the data is achieved. That is if the same study is conducted with different sample size same data will be collected. Cohen, Manion and Morrison (2011), states that there is no exact size

of the sample but these depend on the purpose of the study and the nature of the population under scrutiny. In general, though, the larger the sample the more reliable it is. Wiersma (2008); Cohen, Manion and Morrison (2011) proposed that a sample size of thirty percent as being reliable in a case where the population is not highly heterogeneous hence this study used 30% of one hundred ninety seven (197) food and beverages manufacturing companies which resulted to a sample size of fifty eight (58) companies. In order to get an objective response as opposed to one respondent which may be deemed subjective, two respondents were drawn from every company giving a total of one hundred sixteen (116) respondents. The researcher selected supply chain mangers and procurement officers from each of the food and beverages manufacturing companies who participated in the study. Table 3.1 shows how the sample size was arrived at.

					No. of
No.	Location	No.	Percentage	Sample	Respondents
1	Nairobi	101	0.3	30	60
2	Mombasa	24	0.3	7	14
3	Thika	21	0.3	6	12
4	Kisumu	8	0.3	2	4
5	Nakuru	8	0.3	2	4
6	Eldoret	6	0.3	2	4
7	Kericho	3	0.3	1	2
8	Nyeri	3	0.3	1	2
9	Ruiru	3	0.3	1	2
10	Other towns with less than 3	20	0.3	6	12
	Total	197		58	116

Table 3.1: Sample size

3.5.2 Sampling Technique

The study used cluster sampling where the subjects were geographically clustered based on towns (Mugenda 2008). In this study, food and beverages manufacturing companies from different locations formed into clusters based on towns and from each cluster random sampling technique was used to select the study units.

3.6 Data Collection Instruments

A questionnaire was developed to capture the various variables under study, and for the independent variables. A questionnaire is a research instrument that gathers data over a large sample and its objective is to translate the research objectives into specific questions, and answers for each question provide the data for hypothesis testing. The advantages of a questionnaire over other instruments include: information can be collected from large samples, no opportunity for bias since it is presented in paper form and confidentiality is upheld. The questionnaire contained both closed and open ended questions. The closed ended questions were aimed at giving precise information which minimized information bias and facilitated data analysis, while the open ended questions gave respondents freedom to express themselves.

3.7 Data Collection Procedure

Questionnaire was self-administered to the respondents and two research assistants were recruited and trained so that they were able to get quality results. Secondary data was collected from published sources such as library, internet and research done by other scholars. The target participants were supply chain managers and procurement managers who filled in the questionnaires. These target participants had adequate knowledge about the strategies manufacturing firms are putting in place to improve performance of food and beverages manufacturing companies in Kenya, considering their crucial role in top management involvement.

Food and beverages manufacturing firms were first contacted and the intention to drop the questionnaires and the request to explain to the supply chain managers/procurement managers. The questionnaires were delivered to the respondents (supply chain and procurement managers) who were in charge of logistics functions and the researcher waited for them to be filled. The number of questionnaires that were used to collect data for this study was 116.

3.8 Pilot Test

Pilot test refers to the preliminary study conducted to evaluate feasibility and statistical variability in an attempt to predict an appropriate sample size and improve upon the study design prior to performance of a full-scale investigation. The aim of pilot study was to test the reliability of the questionnaires. According to Sekeran (2009) a pilot test is necessary for testing the reliability of data collection instruments. Pilot study is thus conducted to detect weakness in design and instrumentation and to provide accurate data for selection of a sample (Cooper & Schindler, 2008). In this study, 10% of the questionnaires were pilot tested on six Food and beverages manufacturing companies that were part of the target population but not in the sample in order to get the correct feedback (Mugenda 2008).

3.8.1 Reliability of Research Instruments

Reliability is consistency of measurement (Bollen, 1989), or stability of measurement over a variety of conditions in which basically the same results should be obtained. Cronbach's alpha a coefficient of reliability that gives an unbiased estimate of data generalizability was used to test reliability of the answered questionnaires. According to Zinbarg, Revelle, Yovel & Li (2005, Cronbach's alpha is a coefficient of reliability that gives an unbiased estimate of data generalizability. An alpha coefficient higher than 0.75 indicates that the gathered data has a relatively high internal consistency and could be generalized to reflect opinions of all respondents in the target population. Cronbach's alpha (α) was computed as follows:

$$\alpha = K / (K - 1) \left[1 - (\Sigma \sigma_k^2 / \sigma_{\text{total}}^2) \right] - \text{Equation (1)}$$

Where K is the number of items, $\Sigma \sigma_k^2$ is the sum of the k item score variances, and σ_{total}^2 is the variance of scores on the total measurement (Cronbach, 2004). After obtaining an alpha coefficient that is acceptable, questionnaires were issued to respondents.

3.8.2 Validity of Research Instruments

Mugenda and Mugenda (2003) define validity as the degree to which results obtained from the analysis of the data actually represent the phenomenon under study. Validity also refers to the degree to which an instrument measures what it purports to measure (Mugenda, 2008; Bryman, 2012). This study adopted content validity. Content validity is a qualitative type of validity where the domain of the concept is made clear and the analyst judges opine whether the measures fully represent the domain (Bollen, 1989). In this study Exploratory Factor Analysis (EFA) was used to validate hypothetical constructs by clustering those indicators or characteristics that appear to correlate highly with each other.

3.9 Data Analysis and Presentation

The returned and duly filled questionnaires were verified, coded and tallied according to the themes and thereafter the quantitatively and qualitatively analyzed through the use of tables and figures. The findings of the survey were analyzed. Quantitative analysis was done and results presented in tables and figures. This analysis was based on the responses obtained from the respondents. Inferential data analysis was carried out by the use of factor analysis and correlation analysis to determine the strength and the direction of the relationship between the dependent variable and the independent variables. Regression model was fitted and hypothesis testing carried using linear regression analysis and standard F tests.

This study tested normality, heteroscedasticity and multicolinearity. Normality is important in knowing the shape of the distribution and helps to predict dependent variables scores (Paul & Zhang, 2010). Heteroscedasticity means a situation in which the variance of the dependent variable varies across the data, as opposed to a situation where Ordinary Least Squares, OLS, makes the assumption that $V(\varepsilon_j)=\sigma^2$ for all j, meaning that the variance of the error term is constant (homoscedasticity). Heteroscedasticity complicates analysis because many methods in regression analysis are based on an assumption of equal variance (Park, 2008). Autocorrelation refers to the correlation of a time series with its own past and future values (Box & Jenkins, 1976).

This study also tested for multicollinearity. Multicollinearity is the undesirable situation where the correlations among the independent variables are strong (Martz, 2013). To test for multicollinearity, Variance Inflation Factor (VIF) will be used. If no two independent variables are correlated, then all the VIFs will be 1. If VIF for one of the variables is around or greater than 5, there is multicollinearity associated with that variable. In this case one of these variables must be removed from the regression model (Cohen, Cohen, West & Aiken, 2003).

3.9.1 Statistical measurement model

According to Mugenda and Mugenda (2003), linear regression analysis attempts to determine whether a group of variables together predict a given dependent variable and in this way, attempt to increase the accuracy of the estimate. The general multiple regression model for this study was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + {}_3X_3 + \beta_4 X_4 + \varepsilon$$

Where; Y=Performance of Companies

 β_0 =constant

 β_i is the coefficient for Xi (i=1, 2, 3, 4, 5)

X₁=Cost

 X_2 =Lead-time X_3 =Service quality X_4 =Risk assessment ε = error term

3.9.2 Measurement of Variables

This study used the following rating scales, that is, open-ended questions to allow the respondents to add information that might not be included in the closed-ended questions and Likert scale, developed by Rensis Likert, to examine how strongly subjects agree or disagree with a statement (Cooper & Schindler, 2011). In this study, Likert scales dominated the questionnaire. A Likert Scale can be evaluated easily through standard techniques like, factor analysis and logistic regression analysis (Montgomery, Peck & Vining, 2001). All the hypotheses tested the relationship in the adoption of 3PL providers and performance of food and beverages manufacturing companies was measured by a linear regression model.

- a) Cost is the total transaction charge incurred by a company when moving goods or offering a service (Herbert, Juliana, Mikkola & Tage, 2007). In this study cost was measured using transactional costs and 3PL provider's cost. These measurements were modified and adopted from Wilding & Juriado, (2004).
- b) Lead-time is the total time that elapses between an order's placement and its receipt. It includes the time required for order transmittal, order processing, order preparation, and transit (Treville, Shapiro, & Hameri, 2004). In this study lead-time was measured using timely delivery and delivery reliability.
- c) Service Quality is the degree to which a set of defined characteristics of a product or service fulfills known requirements (CSCMP, 2013). In this study service quality was measured using reliability and responsiveness. These measurements were modified and adopted from Parasuraman *et al.* (1985).

- d) Risk assessment is the process of identifying, analysing and evaluating hazards or uncertainties and determination of the likelihood of occurrence of each risk factor (Tummala, & Schoenherr, 2011). In this study risk assessment was measured using risk identification and risk measurement.
- e) **Performance of companies** was measured in terms of profitability and market share.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study and makes reference to relevant research to support the findings of the study. The findings include demographic information about the sample, results obtained from the descriptive statistics on influence of outsourcing third-party logistics providers, correlation between the influence of outsourcing-third party logistics providers and performance of food and beverage manufacturing companies. In general, analysis was conducted using descriptive statistics, correlation and regression model. Lastly, an overview of the results obtained in the study were presented and discussed in this chapter.

4.2 Response Rate

The targeted respondents in the study were supply chain managers and procurement officers of food and beverages manufacturing companies in Kenya and which were registered members of Kenya Association of Manufacturers (KAM) Directory in the year 2015. A total of 83 self-administered questionnaires were filled out of the expected 116 yielding a response rate of 72% as depicted in Table 4.1. This response rate was excellent and representative and conforms to Mugenda (2008) who stipulated that a

response rate of 50% is adequate for analysis; a rate of 60% is good and a response rate of 70% and over is excellent. This excellent response rate was attributed to the data collection procedure, where the researcher personally administered questionnaires to the respondents who ensured they were filled and collected them for analysis. This response rate demonstrated the validity of the study.

Table 4.1: Response Rate

Response rate	Sample size	Percentage (%)
Returned questionnaires	83	72
Un-returned questionnaires	33	28
Total	116	100

4.3 Manufacturing Companies Demographics

The demographic characteristics of the manufacturing companies which were registered members of KAM Directory in the year 2015 was collected and reviewed. The analysis was based on the information that respondents provided in the questionnaire. The firm's ownership, type of the product, product market, performance of logistics service, logistics services outsourced market served were analysed and the results presented.

4.3.1 Type of product manufactured

Respondents were asked to give the type of product manufactured by their companies. Forty five percent indicated that their manufacturing companies processed food, 36% indicated their manufacturing companies processed beverages and 19% indicated that their companies processed both food and beverage as shown in Table 4.2.

1 able 4.2:	Type of Product manufactured	

	Frequency	Percentage (%)
Food	37	45
Beverages	30	36
Food & Beverage	16	19
Total	83	100

Based on the study findings (Table 4.2) the type of product manufactured was important because it assisted the researcher with the knowledge of understanding the contribution of each sector within food and beverages manufacturing companies. Also, it helped the

researcher to distinguish the results of the study to establish whether there were variations before generalisation of the information.

4.3.2 Ownership of the company

The majority of manufacturing companies (58%) indicated that food and beverage manufacturing companies were locally owned. This result disagreed with the study conducted by Kenya Association of Manufacturers 2013 which showed that majority of manufacturing companies were owned by foreigners. This disparity might have occurred because KAM studied the entire manufacturing companies and generalised their conclusion on food and beverages manufacturing companies as well which was not the case. Also, 34% of food and beverages manufacturing companies indicated that they were both locally and foreign owned and 8% indicated that food and beverages manufacturing companies indicated that they manufacturing companies were foreign owned as shown in Table 4.3.

	Frequency	Percentage (%)
Local	48	58
Foreign	7	8
Both	28	34
Total	83	100

Table 4.3: C)wnershij	p of the	company
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Ownership of food and beverage manufacturing companies was important to determine the extent to which the local economy is self-sustaining towards attainment of Vision 2030. In this case, 58% showed that the ownership of food and beverages manufacturing companies in Kenya are driven by citizens.

4.3.3 Product Market

The respondents were asked to indicate the market of their products. From the study it was found out that 69% served both domestic and foreign markets while 27% served domestic markets only and 5% served foreign markets only as shown in Table 4.4.

	Frequency	Percentage (%)
Domestic markets only	22	27
Foreign markets only	4	5
Both domestic and foreign	57	69
Total	83	100

Table 4.4: Products market

This study showed that food and beverage manufacturing companies' products were largely consumed by both local and foreign markets. Therefore, food and beverages manufacturing companies in Kenya have strong potential towards achieving Vision 2030 by creating job opportunities to the local people and contributing the country's Gross Domestic Product (GDP) through foreign exchange earnings.

4.3.4 Performance of logistic services

Respondents were asked to indicate whether their manufacturing companies perform logistics activities in-house or outsource. The result showed that 87% of manufacturing companies performed their logistics activities in-house and 82% of manufacturing companies indicated they outsource logistics activities as shown in Table 4.5.

Table 4.5: Performance of logistic services

	Frequency	Percentage (%)
Performs logistics activities in-house	72	87
Company outsource logistics services	68	82

From the study it showed that food and beverages manufacturing companies do perform some of the logistics activities in-house and outsource others. This showed that food and beverages manufacturing companies outsource logistics activities that are non-core functions to their business. This study agreed with the study of Ngonela *et al.* (2014) that companies to be able to survive in today's competitive markets, they must focus on their core competencies and adopt outsourcing as a strategic solution to improve quality of service and reduce costs. Also, food and beverages manufacturing companies performed in-house logistics activities which were core to their businesses and had expertise.

4.3.5: Logistic activities outsourced

Further, those respondents who indicated that they outsourced logistic activities were asked to indicate the type of logistic activities they outsourced and 21% indicated that they outsourced transport services, 18% indicated freight services, 16% indicated freight forwarding, transport and distribution, 15% indicated freight forwarding, custom clearance and transport services, 7% indicated customs clearance, 6% indicated transport services, 3% indicated warehousing, distribution and customs, 4% indicated distribution services, 3% indicated warehousing and 1% custom clearance and distribution as shown in Table 4.6.

Table 4.6: Logistic activities outsourced

Logistic activities outsourced	Frequency	Valid Percentage (%)
Freight forwarding	12	18
Custom clearance	5	7
Transport services	14	21
Warehousing	2	3
Distribution services	3	4
Freight forwarding, transport and distribution	11	16
Transport services, warehousing and distribution	4	6
Freight forwarding, custom clearance and transport services	10	15
Customs clearance, transport services and distribution	4	6
Freight forwarding, customs clearance and distribution	1	1
Customs clearance and distribution	1	1
Total	67	100

The finding of this study assisted the researcher in establishing which particular logistics activities were outsourced by food and beverages manufacturing companies more than others. Thus, the finding would help the manufacturing companies and 3PL providers to be aware of which logistics activities outsourced more than others in order to satisfy customers.

4.3.6: Logistic activities outsource from single or multiple logistics companies

Food and beverage manufacturing companies were asked to indicate whether their manufacturing companies outsourced logistic activities from single or multiple sources. The study showed that 85% of food and beverages manufacturing companies indicated they outsourced their logistics companies from multiple while 15% indicated they outsource from single (3PL) source as shown in Table 4.7.
	Frequency	Valid Percentage (%)
Single	10	15
Multiple	56	85
Total	66	100

Table 4.7: Logistic activities outsource from single or multiple logistics companies

The result indicated that food and beverages manufacturing companies outsourced their logistics activities from multiple logistics companies. This meant food and beverages manufacturing companies do not negotiate outsourcing logistics activities as a package from one 3PL and the outcome is dealing with multiple logistics providers for the different types of logistics activities. Food and beverages manufacturing companies could outsource multiple logistics activities as a way of mitigation any risks which would occur as a result of monopoly through single sourcing.

4.4 Reliability and factor analysis for independent and dependent variables

Factor analysis is an interdependent technique in which all variables are simultaneously considered, each related to all others (Ghauri & Gronhaug, 2005). Reliability is consistency of measurement (Bollen, 1989), or stability of measurement over a variety of conditions in which basically the same results should be obtained. The internal consistency method was adopted because it is more stable than the other methods (Bryman, 2012; Cooper & Schindler, 2011). To measure the reliability of the gathered data, Cronbach's alpha was applied.

4.4.1 Reliability and factor analysis for cost

Reliability analysis for testing the internal consistency of all items in each dimension of cost was conducted in this study. All the items achieved Cronbach's alpha of 0.7 suggesting that the questionnaire had high reliability as shown in Table 4.8.

Construct	Items	Cronbach's Alpha	Total to Item correlation	КМО	Loadings	Variance explained
Transaction	Document processing	0.745	.578	0.674	.749	62.88%
cost Forwarding freight rate Custom clearance Transportation and distribution	Forwarding freight rate		.544		.733	
	Custom clearance		.490		.681	
		.449		.609		
	Tracking and tracing		.473		.654	
Logistics	warehousing		.396		.571	
services providers cost	Agency/administratio n fees	0.878	0.784	0.5	0.944	89.14%
	Handling and processing fees		0.784		0.944	

Table 4.8: Reliability and factor analysis for cost

The researcher also, tested the validity of the questionnaire. According to Mugenda (2008); Bryman (2012), construct validity refers to how well you translated or transformed a concept, idea, or behavior (a construct) into a functioning and operating reality and the operationalization. Construct validity was achieved through restricting the questions to conceptualization of the variables and ensuring that indicators of each variable fell with the same construct. The purpose of this check was to ensure that each measure adequately assessed the construct it was purported to assess. The factor loading of the items in the model of cost were all positive and significant. This meant that although these items were developed from literature reviewed focusing on the context of developed countries, the items converged very well to their respective dimensions and were applicable in the Kenyan context.

4.4.2 Reliability and factor analysis for lead-time

Reliability and factor analysis was performed for all sub-dimension of lead-time. The results of the analysis are illustrated in Table 4.9.

Construct	Items	Cronbach's Alpha	total to Item correlation	КМО	Loadings	Variance explained
On time	Order processing rate	0.776	.503	0.584	.747	69.43%
denvery	Order fulfilment rate		.766		.919	
	Inventory replenishment		.586		.824	
Delivery	Delivery speed	0.846	.718	0.724	.880	77.12%
reliability	Delivery to location		.753		.897	
	Delivery planning		.686		.857	

Table 4.9: Reliability and factor analysis for lead-time

The Cronbach's alpha values of lead-time and factor loading of all lead-time statements had higher absolute value of the loading. Thus, all items were retained and used in the study.

4.4.3 Reliability and factor analysis for service quality

Reliability and factor analysis was conducted in all sub-dimension of service quality. From the study it was established that the Cronbach's alpha values was above 0.7 and thus met the threshold of as indicated in Table 4.10.

Construct	Items	Cronbach's Alpha	Total to Item correlation	КМО	Loadings	Variance explained
Reliability	Timeliness	0.871	.723	0.736	.875	79.69%
	Consistency		.780		.905	
	Accuracy		.765		.898	
Responsiveness	Willingness to help	0.882	.739	0.792	.839	68.37%
	attention to requests		.797		.882	
	Problem resolution		.776		.870	
	Flexibility		.664		.787	
	Complaint handling		.626		.749	

Table 4.10: Reliability and factor analysis for service quality

The value of loading factors were above 0.5 and significant p < 0.05. The Cronbach's alpha values reached the threshold of 0.7 indicating strong consistency, thus verifying reliability. The coefficient between the items and factors were positive and significant at p < 0.05, indicating convergent validity.

4.4.4 Reliability and factor analysis for risk assessment

A confirmatory factor analysis by extraction method of principle components was conducted. The study found out that all items and factor loadings were above 0.5 and significant p < 0.05 as indicated Table 4.11.

Construct	Items	Cronbach's Alpha	Total to Item correlation	KMO	Loadings	Variance explained
	Delay in logistics service delivery	0.867	.692	0.721	.857	79.20%
Risk identification	Logistics service provider capacity		.758		.897	
	Logistics providers system		.796	0.852	.915	
	Loss or damage of assets or goods	0.928	.850		.919	82.41%
Risk	Loss of income		.859		.924	
KISK measurement	Interruption of service levels		.799		.886	
	Liabilities incurred		.824		.902	

Table 4.11: Reliability and factor analysis for risk assessment

The Cronbach's alpha values reached the threshold of 0.7 indicating strong consistency, thus verifying reliability. To assess the factorability of items, the researcher examined this indicator (Kaiser Meyer-Olin Measure of Sampling Adequacy). For every EFA, it was found that manifest variables have KMO Measures of Sampling Adequacy above the threshold of 0.6 (Kaiser, 1974).

4.4.5 Reliability and factor analysis for performance of food and beverages companies

On performance of food and beverages manufacturing companies, reliability and factor analysis were conducted. From the study it was established that Cronbach's alpha values above 0.7 as presented in Table 4.12.

Construct	Items	Cronbach's Alpha	Total to Item correlation	КМО	Loadings	Variance explained
Market share	Percentage of the market share Availability of	0.91	.784	0.822	.882	78.97%
	your products in the market		.814		.898	
	your products in the market		.847		.921	
	Loyalty of your customers		.745		.852	
Profitability Group As ba	The organization growth over time	0.894	.769	0.745	.896	82.80%
	Asset base/facilities		.823		.924	
	Income revenue earnings		.794		.909	

Table 4.12: Reliability and factor analysis for performance of food and beverage companies

The overall performance of food and beverages manufacturing companies was measured using market share and profitability. The results showed that the performance of food and beverages manufacturing companies had Cronbach's alpha values above 0.7 and the factor loading value was greater than 0.5 and was accepted. Also, the researcher examined the factorability of items using Kaiser Meyer-Olin Measure of Sampling Adequacy. For every EFA, it was found that manifest variables have KMO Measures of Sampling Adequacy above the threshold of 0.6 (Kaiser, 1974).

4.5 Descriptive analysis of the study variables

The purpose of descriptive statistics is to enable the researcher, to meaningfully describe a distribution of scores or measurements using indices or statistics. The type of statistics or indices used depends on the types of variables in the study and the scale of measurements. The researcher in this study used mean average; percentages and deviations to present the study findings. The general objective of this study was to investigate on influence of outsourcing 3PL providers on the performance of food and beverages manufacturing companies in Kenya. The study analysed descriptive statistics for the following observed variables: cost, lead-time, service quality and risk assessment.

4.5.1 Cost

The study sought to find out whether cost determines performance of food and beverages manufacturing companies in Kenya. This objective was measured using the following indicators: transactional cost and logistics service providers' cost in the opinion statements given. Respondents were asked to indicate the extent to which cost affected performance of food and beverages manufacturing companies. This was on a likert scale of not at all, small extent, moderate, large extent and very large extent. Thus, in this study the scale of not all and small extent meant disagree while large and very large extent meant agreed.

a) Transactional cost

The majority of the respondents (40%) indicated moderate that cost for processing documents neither nor affected the performance food and beverages manufacturing companies. This is because average number of food and beverages manufacturing companies believe that the cost of processing documents is not a major issue as companies can handle on their own and other companies felt that it is an important issue and thus they can be outsourced hence affecting performance. Likewise, 35% disagreed that cost for processing documents was not regarded as important when outsourcing logistics services by food and beverages manufacturing companies. This is because most food and beverages manufacturing companies might incur the cost of processing documents on their own and hence cost of processing documents does not affect performance of companies when outsourcing logistics services. However, 25% agreed

that cost for processing documents affected performance of food and beverages manufacturing companies. Therefore, these companies felt that cost of processing documents was important and could be a major determinant when outsourcing logistics services.

With regard to freight forwarding cost, 35% of the respondents agreed that freight forwarding cost affected performance of food and beverages manufacturing companies, 35% indicated moderate and 30% disagreed that freight forwarding cost affected food and beverages manufacturing companies. On customs clearance cost, 47% of the respondents agreed that customs clearance cost affected performance of food and beverages manufacturing companies, 8% indicated moderate and 25% disagreed that customs clearance cost affected performance of food and beverages manufacturing companies. Concerning transportation and distribution cost, 50% of the respondents agreed that transportation and distribution cost affected performance of food and beverages manufacturing companies, while 45% indicated moderate and 6% disagreed that transportation and distribution cost affected performance of food and beverages manufacturing companies. Regarding tracking and tracing cost, 34% of respondents agreed that tracking, and tracing cost affected performance of food and beverages manufacturing companies, 37% indicated moderate and 28% disagreed that tracking and tracing cost affected performance of food and beverages manufacturing companies as shown in Table 4.13.

Table 4.13: Transactional cost

Statamonts	Not at all	Small extent	Moderate	Large extent	Very large extent	Moon	Std.
Desument	(70)	(70)	(70)	(70)	(70)	Witan	Deviation
Document	4	31	40	20	5	2.92	0.93
processing							
Freight forwarding	17	13	35	33	2	2 90	1 1 1
cost	17	15	55	55	2	2.70	1.11
Custom clearance	11	14	28	37	10	3.20	1.15
Transportation and							
distribution	0	6	45	34	16	3.59	0.83
Tracking and tracing	7	22	26	77	7	2.04	1.04
Tracking and tracing	/	23	50	21	1	5.04	1.04
Warehousing	14	14	37	23	11	3.01	1.18

In general, the study found out that the majority of the respondents indicated that transportation and distribution cost affected performance of food and beverages manufacturing companies in Kenya. This might be attributed to the fact that food and beverages manufacturing companies outsourcing logistics services to bring raw materials to the companies and also transportation of finished goods to the final consumers. In addition customs clearance was found to affect performance of food and beverages manufacturing companies. This is because any delay in clearance of goods from the ports attracts additional cost to the products. On average, food and beverages manufacturing companies felt that document processing, freight forwarding, tracking and tracing affected performance of food and beverages manufacturing companies. This is because the companies have room to intervene on cost escalation. Also, these costs are regarded as transactional cost and they provide a major decision when food and beverages manufacturing companies outsource 3PL providers. Thus, food and beverages manufacturing companies outsource logistics activities when transactional cost of producing in-house is higher and it would reduce profitability of the company if done inhouse. This result agrees with the study of Selviaridis and Spring (2007) that the decision on whether to perform logistics activities in-house or outsource from 3PL providers depend on evaluation of cost or service trade-offs. One important determinant of the decision is cost comparison between alternative options. Costs associated with performing logistics activities in-house and investment in capital assets is traded-off against service provider fees and the lowest cost solution should then be selected (van Damme & Ploos van Amstel, 1996).

b) Logistics service provider cost

A high number of respondents (43%) indicated moderate that agency or administrative fees affected performance of food and beverages manufacturing companies, 35% agreed that agency or administrative fees affected performance of food and beverages manufacturing companies and 22% disagreed that agency or administrative fees affected performance of food and beverages manufacturing companies. Concerning handling and processing fees, 43% of the respondents indicated that handling and processing fees moderately affected performance of food and beverages manufacturing companies while 38% agreed that handling and processing fees affected performance of food and beverages manufacturing companies while and processing fees affected performance of food and beverages manufacturing companies and 19% disagreed that handling and processing fees affected performance of food and beverages manufacturing companies as shown in Table 4.14.

Statements	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Agency/administration fees	6	16	43	22	13	3.20	1.06
Handling and processing fees	2	17	43	22	16	3.31	1.01

Table 4.14: Logistics service provider cost

Basing on the results of the study, agency or administrative fees, handling and processing fees affected the performance of food and beverages manufacturing companies in Kenya. If the cost of agency or administrative fees is high, it is likely to affect the profitability of the company. Also, if the handling and processing fees is high, it would reduce the profitability of company producing in-house and therefore it would be better to outsourcing company. Therefore, food and beverages manufacturing companies in Kenya would outsource 3PL providers whose administrative, handling and processing fees are relatively lower in order for them to break-even and eventually increase profit margins. Thus, the findings of this study agreed with Selviaridis and Spring (2007) that logistics outsourcing offers many cost-related advantages such as reduction in asset investment (turning fixed cost into variable), labour and equipment maintenance costs. Cost and service represent the most important criteria in logistics outsourcing decisions (SoonHu, 2010).

4.5.2 Lead-time

The study sought to examine if lead-time determines performance of food and beverages manufacturing companies in Kenya. This objective was measured using the following indicators: on time delivery and delivery reliability in the opinion statements given. Respondents were asked to indicate the extent to which lead-time affected performance of food and beverages manufacturing companies. This was on a likert scale of not at all, small extent, moderate, large extent and very large extent. Thus, in this study the scale of not all and small extent meant disagree while large and very large extent meant agreed.

a) Time delivery

Basing on the results of the study, 53% of the respondents agreed that order processing rate affected performance of food and beverages manufacturing companies while 38% indicated moderate and small number of respondents (8.4%) disagreed that order processing rate affected performance of food and beverages manufacturing companies. On order fulfilment rate, 73.4% of respondents agreed

that order fulfilment rate affected performance of food and beverages manufacturing companies whereas 14.5% of respondents indicated moderate and 12% of respondents disagreed that order fulfilment rate affected performance of food and beverages manufacturing companies. With regarding to inventory replenishment, 77.1% of respondents agreed that inventory replenishment affected performance of food and beverages manufacturing companies and small number of respondents (19.3%) disagreed that inventory replenishment affected performance of food and beverages manufacturing companies as shown in Table 4.15.

on time delivery	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Order processing rate	0	8.4	38.6	25.3	27.7	3.14	.93
Order fulfilment rate	2.4	9.6	14.5	37.3	36.1	3.52	.94
Inventory replenishment	2.4	16.9	3.6	36.1	41.0	3.22	.86

Table 4.15: Time delivery

From the study, it was found out that order processing rate affected performance of food and beverages manufacturing companies. This is because food and beverages manufacturing companies regarded order processing rate as very important in the performance of their business and therefore a key criteria on outsourcing of 3PL providers. Thus, a high order processing rate would increase the performance of companies and it is on this basis that companies would select 3PL service providers. Equally, a high order fulfilment rate would increase the performance of food and beverages manufacturing companies and therefore, companies would choose 3PL providers that would help them to improve performance. Increase in delivery performance is possible through a reduction in lead-time attributes such as on-time delivery, on time orders fill rate and order completeness. This study is in line with the findings of Forrest *et al.* (2008), who noted that lead-time reduction would promote the responsiveness of the chain by providing products to the customers in less uncertain supply time. The key to successful outsourcing of logistics services lies in the finding a 3PL provider that has the most strategic fit with the company's goals. Likewise, the study found out that inventory replenishment affected performance of food and beverages manufacturing companies. This is because the rate at which inventory is replenished is key in determining the appropriate 3PL providers to be outsourced. Inventory assists companies to prevent stock outs, stabilise prices and increase sales volume. Thus, food and beverages manufacturing companies manufacturing companies would outsource 3PL providers whose inventory replenishment rate is high.

b) Delivery Reliability

From the study findings, 69.6% of respondents agreed that delivery speed affected performance of food and beverages manufacturing companies while 16.9% indicated moderate and 13.3% of respondents disagreed that delivery speed affected performance of food and beverages manufacturing companies. Regarding delivery to location, 61.5% of respondents agreed delivery to location affected performance of food and beverages manufacturing companies whereas 31.3% indicated moderate and 7.2% of respondents disagreed that delivery to location affected performance of food and beverages manufacturing companies. On delivery planning, 56.6% of respondents agreed that delivery planning affected performance of food and beverages manufacturing companies. On delivery planning, 56.6% of respondents agreed that delivery planning affected performance of food and beverages manufacturing companies indicated moderate and 16.9% of respondents disagreed that delivery planning affected performance of food and beverages manufacturing companies and 16.9% of respondents disagreed that delivery planning affected performance of food and beverages manufacturing companies while 26.5% of respondents indicated moderate and 16.9% of respondents disagreed that delivery planning affected performance of food and beverages manufacturing companies as in Table 4.16.

Table 4.16: Delivery Reliability

Delivery reliability	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Delivery speed	0	13.3	16.9	38.6	31.3	3.59	.92
Delivery to location	0	7.2	31.3	45.8	15.7	3.70	.82
Delivery planning	0	16.9	26.5	36.1	20.5	3.60	1.00

From the results, it was observed that delivery speed, delivery to location and delivery planning affected performance of food and beverages manufacturing companies. The performance of food and beverages manufacturing companies can improve through reduction of lead-time and this can be attributed to on-time delivery, on time orders fill and order completeness. Thus companies would look for delivery speed, delivery to location and delivery planning as a way of reducing lead-time thereby increasing their performance. Companies would make decisions to outsource 3PL providers whose delivery speed is high, who can deliver to the required destination on time as planned. These findings are in harmony with Ellinger and Chen (2010), who observed that the performance of logistics, ranking of 3PL selection criteria can be based on price, reliability, service quality, on-time performance, cost reduction, flexibility and innovation, good communication, management quality, location, customize service, speed of service, order cycle time, easy to work with, customer support, vendor reputation, technical competence, special expertise. Flexibility of delivery systems to meet particular customer needs can be achieved by meeting a particular customer delivery requirement at an agreed place, agreed mode of delivery and with agreed upon customized packaging.

4.5.3 Service quality

The study sought to assess how service quality determined performance of food and beverages manufacturing companies in Kenya. This objective was measured using the following indicators: reliability and responsiveness in the opinion statements given. Respondents were asked to indicate the extent to which service quality affected performance of food and beverages manufacturing companies. This was on a likert scale of not at all, small extent, moderate, large extent and very large extent. Thus, in this study the scale of not all and small extent meant disagree while large and very large extent meant agreed.

a) Reliability

From the findings it was observed that 71% of respondents agreed that timeliness affected performance of food and beverages manufacturing companies while 14.5% of respondents indicated moderate and 14.4% of respondents disagreed that timeliness affected performance of food and beverages manufacturing companies. On consistency, 61.5% of respondents agreed that consistency affected performance of food and beverages manufacturing companies whereas 27.7% of respondents indicated moderate and 3.6% of respondents disagreed that consistency affected performance of food and beverages manufacturing companies. With regard to accuracy, 55.4% of respondents agreed that accuracy affected performance of food and beverages manufacturing companies where 26.5% of respondents indicated moderate and 3.6% of respondents indicated performance of food and beverages manufacturing companies where 26.5% of respondents indicated moderate and 3.6% of respondents indicated performance of food and beverages manufacturing companies where 26.5% of respondents indicated moderate and 3.6% of respondents indicated performance of food and beverages manufacturing companies where 26.5% of respondents indicated moderate and 3.6% of respondents indicated performance of food and beverages manufacturing companies where 26.5% of respondents indicated moderate and 3.6% of respondents disagreed that accuracy affected performance of food and beverages manufacturing companies where 26.5% of respondents indicated moderate and 3.6% of respondents disagreed that accuracy affected performance of food and beverages manufacturing companies as shown in Table 4.17.

Table 4.17: Reliability

Statements	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Timeliness	3.6	10.8	14.5	36.1	34.9	3.47	0.99
Consistency	3.6	7.2	27.7	38.6	22.9	3.70	1.02
Accuracy	3.6	14.5	26.5	28.9	26.5	3.60	1.14

From the study findings it was noted that timeliness, consistency and accuracy of service delivery affected performance of food and beverages manufacturing companies. Food and beverages manufacturing companies considered timeliness, consistency and accuracy of service delivery as key in outsourcing 3PL activities. Therefore, Food and beverages manufacturing companies outsource 3PL providers who are able to provide timely and accurate services. The findings of this study concurred with the study of Davis and Mentzer (2006), who noted that the delivery of high-quality logistics services includes functional aspects such as timeliness, ordering procedures and order accuracy and order condition. The level of performance with respect to both aspects should be based on an accurate assessment of what the customer truly values.

b) Responsiveness

The study observed that 45.8% of respondents agreed that willingness to help affected performance of food and beverages manufacturing companies whereas 26.5% indicated moderate and 27.7% of respondents disagreed that willingness to help affected performance of food and beverages manufacturing companies. Concerning prompt attention to requests, 60.3% of respondents agreed that prompt attention to requests affected performance of food and beverages manufacturing companies while 20.5% of respondents indicated moderate and 3.6% of respondents disagreed that prompt attention to requests affected performance of food and beverages manufacturing companies while 20.5% of respondents indicated moderate and 3.6% of respondents disagreed that prompt attention to requests affected performance of food and beverages manufacturing companies. Based on problem resolution, 69.9% of respondents agreed that problem resolution

affected performance of food and beverages manufacturing companies while 20.5% of respondents indicated moderate and 9.6% of respondents disagreed that problem resolution affected performance of food and beverages manufacturing companies. Regarding flexibility, 54.2% of respondents agreed that flexibility affected performance of food and beverages manufacturing companies while 39.8% of respondents indicated moderate and 3.6% of respondents disagreed that flexibility affected performance of food and beverages manufacturing companies. Finally on complaint handling, 60.2% of respondents agreed that complaint handling affected performance of food and beverages manufacturing companies. Finally on complaint handling, 60.2% of respondents disagreed that complaint handling affected performance of food and beverages manufacturing companies where 28.9% of respondents indicated moderate and 1.2% of respondents disagreed that complaint handling affected performance of food and beverages manufacturing companies as shown in Table 4.18.

Statements	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Willingness to help	2.4	25.3	26.5	22.9	22.9	3.39	1.17
Prompt attention to requests	3.6	15.7	20.5	38.6	21.7	3.59	1.10
Problem resolution	2.4	7.2	20.5	45.8	24.1	3.82	0.96
Flexibility	3.6	2.4	39.8	28.9	25.3	3.70	1.00
Complaint handling	1.2	9.6	28.9	31.3	28.9	3.77	1.02

Table 4.17: Responsiveness

Based on the study findings, it was found out that willingness to help affected performance of food and beverages manufacturing companies. Food and beverages manufacturing companies considered willingness of logistics providers to help and to offer prompt service as key in outsourcing 3PL providers. These study findings are in agreement with the study of Wanjau (2010): Parasuraman *et al.* (1985) who noted that responsiveness entails the willingness to help customers and providing of prompt services. Also, Food and beverages manufacturing companies considered that flexibility

of service delivery as vital when outsourcing 3PL activities. Logistics providers who are flexible in service delivery are likely to be given priority by Food and beverages manufacturing companies when outsourcing 3PL. Flexibility would enable 3PL providers to meet dynamic customer service expectations. Attention to service quality can differentiate an organization from another and thus gain competitive advantage.

4.5.4 Risk Assessment

The study sought to establish ways in which risk assessment determined performance of food and beverages manufacturing companies in Kenya. This objective was measured using the risk identification and risk measurement indicators in the opinion statements given. Respondents were asked to indicate the extent to which risk assessment affected performance of food and beverages manufacturing companies. This was on a likert scale of not at all, small extent, moderate, large extent and very large extent. Thus, in this study the scale of not all and small extent meant disagree while large and very large extent meant agreed.

a) Risk identification

From the finding of the study, it showed that 72.3% of respondents agreed that delay in logistics service delivery affected performance of food and beverages manufacturing companies while 10.8% of respondents indicated moderate and 16.8% of respondents disagreed that delay in logistics service delivery affected performance of food and beverages manufacturing companies. On logistics service provider capacity, 66.2% of respondents agreed that logistics service provider capacity affected performance of food and beverages manufacturing companies whereas 16.9% of respondents indicated moderate and 3.6% of respondents disagreed that logistics service provider service providers' capacity affected performance of food and beverages manufacturing companies whereas 16.9% of respondents indicated moderate and 3.6% of respondents disagreed that logistics service provider's capacity affected performance of food and beverages manufacturing companies. Concerning logistics provider systems, 59.6% of respondents agreed that logistics provider systems affected performance of food and beverages manufacturing companies while 26.5% of respondents indicated moderate and 2.4% of respondents disagreed that logistics

provider systems affected performance of food and beverages manufacturing companies as shown in Table 4.18.

Statements	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Delay in logistics service delivery	4.8	12.0	10.8	32.5	39.8	3.33	.99
Logistics service provider capacity	3.6	13.3	16.9	34.9	31.3	3.48	1.04
Logistics providers system	2.4	12.0	26.5	45.8	13.3	3.55	.95

Table 4.18: Risk Identification

Generally, from the results it was found out that delay in logistics service affected performance of food and beverages manufacturing companies. This is because delay of logistics service might cause shortage of essential materials required in production process and therefore food and beverages manufacturing companies considered risk identification when selecting 3PL providers. Also, the study found out that logistics service provider capacity affected performance of food and beverages manufacturing companies consider capacity of logistics providers when selection potential 3PL providers. Logistics service providers who are capable of meeting supply expectations of the companies are put into consideration. Similarly, logistics provider system was identified as a strategy of mitigating risk. These findings are in agreement with Chopra and Sodhi (2004), who observed that risk areas should be clearly identified and possible consequences are agreed so that risk mitigation strategies can be implemented. Care should be taken since some strategies may adversely introduce risks in other areas.

b) Risk Measurement

It was observed that, 54% of respondents agreed that loss or damage of assets or goods affected performance of food and beverages manufacturing companies' while16.9% of respondents indicated moderate and 28.9% of respondents disagreed that loss or damage of assets or goods affected performance of food and beverages manufacturing companies. Regarding loss of income, 59% of respondents agreed that loss of income affected performance of food and beverages manufacturing companies whereas 15.7% of respondents indicated moderate and 25.3% of respondents disagreed that loss of income affected performance of food and beverages manufacturing companies. Based on interruptions of service levels, 62.6% of respondents agreed that interruptions of service levels affected performance of food and beverages manufacturing companies while 15.7% of respondents indicated moderate and 21.7% of respondents disagreed that interruptions of service affected performance of food and beverages manufacturing companies. Finally on liabilities incurred, 44.6% of respondents agreed that liabilities incurred affected performance of food and beverages manufacturing companies where 27.1% of respondents indicated moderate and 27.7% of respondents disagreed that liabilities incurred affected performance of food and beverages manufacturing companies as shown in Table 4.19.

Statements	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Loss or damage of assets or goods	9.6	19.3	16.9	33.7	20.5	3.19	1.24
Loss of income	7.2	18.1	15.7	22.9	36.1	3.12	1.15
Interruption of service levels	13.3	8.4	15.7	31.3	31.3	3.28	1.22
Liabilities incurred	6.0	21.7	27.7	27.7	16.9	3.28	1.16

Table 4.19: Risk Measurement

From the study is showed that loss or damage of assets or goods affected performance of food and beverages manufacturing companies. Thus, great care should be taken by food and beverages manufacturing companies when outsourcing 3PL providers. Logistics providers who pose high risk in loss or damage of assets or goods are likely to be avoided when outsourcing logistics services. Also, the study showed that interruptions of service levels affected performance of food and beverages manufacturing companies. This is because interruptions service delivery might cause delays in production of goods and hence result in loss of customers. Equally, the study showed that loss of income and liability incurred affected performance of food and beverages manufacturing companies. Risk is a threat that manifests its effects upon the company resources. This study findings concurred with Tummala and Schoenherr (2011) that risk may cause loss of or damage to assets, loss of income, interruption of service levels, cost overruns, schedule delays, poor process performance, liabilities incurred, damage repair costs, or injuries.

4.5.5 Performance of Food and Beverage Manufacturing Companies

The study sought to establish the rating performance of food and beverages manufacturing companies in Kenya. This was measured using market share and profitability indicators in the opinion statements given. Respondents were asked to indicate the extent to which they measured performance of food and beverages manufacturing companies. This was on a likert scale of not at all, small extent, moderate, large extent and very large extent. Thus, in this study the scale of not all and small extent meant disagree while large and very large extent meant agreed.

a) Market Share

The study found out that 62.7% of respondents agreed that they used percentage of their market share to measure performance, 24.1% of respondents indicated moderate and 4.8% disagreed that they used percentage of their market share to measure performance of food and beverages manufacturing companies. With regard to product availability in

the market, 57.8% of respondents agreed that they used availability of their products in the market to measure performance while 28.9% of respondents indicated moderate and 13.2% of respondents disagreed that they used availability of their products in the market to measure performance. On competition, 60.3% of respondents agreed that they used competition to measure their performance while 27.7% of respondents indicated moderate and 12% of respondents disagreed that they used competition to measure their performance. Concerning loyalty, 66.2% of respondents used loyalty of their customers to measure performance of companies whereas 22.9% of respondents indicated moderate and 10.8% of respondents disagreed that they used loyalty of their customers to measure performance of companies whereas 22.9% of their customers to measure performance of companies whereas 22.9% of their customers to measure performance of companies whereas 22.9% of their customers to measure performance of companies as shown in Table 4.20.

Statements	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Percentage of the market share	4.8	8.4	24.1	49.4	13.3	3.58	0.99
Availability of your products in the market	4.8	8.4	28.9	34.9	22.9	3.63	1.08
Competitiveness of your products in the market	4.8	7.2	27.7	39.8	20.5	3.64	1.04
Loyalty of your customers	4.8	6.0	22.9	32.5	33.7	3.84	1.11

Table 4.20: Market share

Thus, from the study it was observed that performance of food and beverages manufacturing companies would be measured by use of percentage of market share, availability of the company's product in the market, competition of the company's product in the market and loyalty of customers towards the company's products. These results are in harmony with the study by Waiganjo (2013) that noted that although performance has been traditionally conceptualized in terms of financial measures, some

scholars have proposed a broader performance concept that incorporates non-financial measures including among others market share, product quality, and company image.

b) Profitability

The result showed that 69.9% of respondents agreed that they used organizational growth over a given period of time to measure performance of companies whereas 24.1% of respondents indicated moderate and 4.8% of respondents indicated that they used organizational growth over a given period of time to measure performance of companies. Based on asset base/facility, 59.1% of respondents agreed that they used asset base/facility to measure performance of their companies while 26.5% of respondents indicated moderate and 4.8% of respondents disagreed that they used asset base/facility to measure their companies' performance. Finally, on revenue earnings, 65% of respondents agreed that they used income revenue earnings to measure their companies performance while 22.9% of respondents indicated moderate and 4.8% of respondents disagreed that they used income revenue earnings to measure their companies performance as shown in Table 4.21.

Statements	Not at all (%)	Small extent (%)	Moderate (%)	Large extent (%)	Very large extent (%)	Mean	Std. Deviation
Organization growth over time	4.8	1.2	24.1	49.4	20.5	3.80	0.95
Asset base/facilities	4.8	9.6	26.5	43.4	15.7	3.55	1.03
Income revenue earnings	4.8	7.2	22.9	36.1	28.9	3.77	1.10

Table 4.21: Profitability

Generally, from the results it was noted that food and beverages manufacturing companies used organizational growth, asset base/facility to measure performance of their companies. Food and beverages manufacturing companies whose profitability has

been tremendous over a given period of time are considered to be performing well. Also, the manufacturing companies' income revenue earnings would be used to measure performance of manufacturing companies. Food and beverages manufacturing companies whose income revenue earnings have been increasing steadily are perceived to be profitable. These study findings, are in agreement with Wanjau (2010) and Waiganjo (2013) who noted that although performance can be measured using profitability, companies which have profits are deemed be performing well.

4.6 Correlation of study variables

Correlation is often used to explore the relationship among a group of variables (Pallant, 2010), in turn helping in testing for multicollinearity. That the correlation values are not close to 1 or -1 is an indication that the factors are sufficiently different measures of separate variables (Farndale, Hope-Hailey & Kelliher, 2010). It is also an indication that the variables are not multicollinear. Therefore, absence of multicollinearity allowed the study to utilize all the independent variables.

From the study findings, it showed that there was a strong positive correlation (0.765) between risk assessment and performance. It is an indication that risk assessment is an important aspect when outsourcing of 3PL providers. Therefore, food and beverages manufacturing companies should consider risk assessment of 3PL providers before outsourcing logistics activities. These study findings correspond with Ellramet *et al.* (2008) who noted that, through risk assessment, logistics outsourcing can be seen as a way of reducing a company's risk by sharing it with suppliers or service providers. Investment in logistics equipment and networks always incorporates a great deal of risks (Ellramet *et al.*, 2008).

Concerning lead-time, the study observed that there was a strong positive correlation (0.756) between lead-time and performance of food and beverages manufacturing companies. This was an indication that food and beverages manufacturing companies considered lead-time when outsourcing logistics activities. Third party logistics

providers whose lead-time is short are given high consideration while those with long lead-times are avoided. Thus, lead-time affects the performance of food and beverages manufacturing companies. These findings are in agreement with the study of Treville, Shapiro and Hameri (2004) who observed that lead-time has serious effects on the coordination among logistics partners and thus a key aspect in logistics service. Therefore, lead-time reduction can be viewed as a coordination enabler in supply chain and the overall performance of the company.

Based on service quality, the study revealed that there was a positive relationship between service quality and performance of food and beverages manufacturing companies. These study findings corresponded with the study of Davis and Mentzer (2006) who alluded that service quality is commonly noted as a critical prerequisite and determinant of competitiveness for establishing and sustaining satisfying relationships with customers. Attention to service quality can make an organization different from other organizations and gain a lasting competitive advantage. Therefore, food and beverages manufacturing companies consider service quality when outsourcing 3PL providers.

Finally on cost, the study revealed that there was a positive correlation between cost and performance of food and beverages manufacturing companies. This meant that food and beverages manufacturing companies considered cost when selecting 3PL providers. Thus, cost affects performance of food and beverages manufacturing companies. These results concurred with the study of Wilding and Juriado (2004) who observed that logistics outsourcing offers many cost-related advantages such as reduction in asset investment (turning fixed cost into variable), labour and equipment maintenance costs. Third party logistics providers serve multiple customers and are able to utilize capacity better and spread logistics costs, thus achieving economies of scale (Langley, 2015) as shown in Table 4.22.

Variables		Performance	cost	Lead time	Service quality	Risk assessment
Performance	Pearson Correlation	1				
	Sig. (2-tailed) N	74				
Cost	Pearson Correlation	.600**	1			
	Sig. (2-tailed)	.000				
	Ν	74	74			
Lead time	Pearson Correlation	.756**	.496**	1		
	Sig. (2-tailed)	.000	.000			
	Ν	74	74	74		
Service quality	Pearson Correlation	.741**	.282*	.423**	1	
	Sig. (2-tailed)	.000	.015	.000		
	Ν	74	74	74	74	
Risk assessment	Pearson Correlation	.765**	.475**	.381**	.411**	1
	Sig. (2-tailed)	.000	.000	.001	.000	
	Ν	74	74	74	74	74

Table 4.22: Correlation of study variables

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.7 Test of assumptions of the study variables

When the assumptions of the linear regression model are correct, ordinary least squares (OLS) provides efficient and unbiased estimates of the parameters (Kaiser, 1974). To ensure that there was no violation of the assumptions, this study tested for multicollinearity, homoscedasticity and normality test.

4.7.1 Multicollinearity

Multicollinearity is the undesirable situation where the correlations among the independent variables are strong. In other words, multicollinearity misleadingly bloats the standard errors. Thus, it makes some variables statistically insignificant while they should be else significant (Martz, 2013). Tolerance of a respective independent variable is calculated from $1 - R^2$.

The test result for multicollinearity was done, using both the VIF and tolerance. With VIF values being less than 5, it was concluded that there was no presence of multicollinearity in this study. The VIF shows us how much the variance of the coefficient estimate is being inflated by multicollinearity. This is indicated in Table 4.23.

	Collinearity Stat	istics
Variables	Tolerance	VIF
Cost	.920	1.087
Lead-time	.538	1.858
Service quality	.799	1.252
Risk assessment	.818	1.222

Table 4.23: Multicollinearity test results for the study of independent variables

A tolerance with a value close to 1 means there is little multicollinearity, whereas a value close to 0 suggests that multicollinearity may be a threat (Belsley, Kuh & Welsch, 2004). The reciprocal of the tolerance is known as Variance Inflation Factor (VIF). Equally, the VIF measures multicollinearity in the model in such a way that if no two independent variables are correlated, then all the VIF values will be 1, that is, there is no multicollinearity among factors. But if VIF value for one of the variables is around or greater than 5, then there is multicollinearity associated with that variable (Martz, 2013).

From the findings it shows that there was no presence of multicollinearity in this study. All the values had a tolerance close to 1 means there is little multicollinearity.

4.7.2 Homoscedasticity

Heteroscedasticity in a study usually happens when the variance of the errors varies across observation (Long & Ervin, 1998). Breusch-Pagan and Koenker was used to test the null hypothesis that the error variances are all equal versus the alternative that the error variances are a multiplicative function of one or more variables. Breusch-Pagan and Koenker test the null hypothesis that heteroscedasticity not present (homoscedasticity) if sig-value is less than 0.05, reject the null hypothesis. A large chi-square value greater than 9.22 would indicate the presence of heteroscedasticity (Sazali, Hashida, Jegak & Raduan, 2009). In this study, the chi-square value was 7.585 indicating that heteroscedasticity was not a concern as shown in Table 4.24.

- Ho: Constant variance
- Variables: Cost (C), Lead time (LT), Service quality (SQ) and Risk Assessment (RA)

Table 4.24: Breusch-Pagan Test for Heteroscedasticity

Но	Variables	Chi2(1)	Prob > Chi2
Constant Variance	C,LT,SQ and RA	7.585	0.108

4.7.3 Normality tests

The normality of data distribution was assessed by examining its skewness and kurtosis (Kline, 2005). A variable with an absolute skew-index value greater than 3.0 is extremely skewed while a kurtosis index greater than 8.0 is an extreme kurtosis (Kline,

2005). Cunningham (2008) stated that an index smaller than an absolute value of 2.0 for skewness and an absolute value of 7.0 is the least violation of the assumption of normality. The results of the normality test of the dependent variable indicated skewness and kurtosis in the range of -1 and +1 as shown in Table 4.25. This implies that the assumption of normality was satisfied.

Variables		Statistic	Std. Error
Lead time	Mean	.026	.112
	Std. Deviation	.973	
	Skewness	.287	.277
	Kurtosis	930	.548
Risk assessment	Mean	.065	.108
	Std. Deviation	.935	
	Skewness	027	.277
	Kurtosis	194	.548
Service quality	Mean	.039	.109
	Std. Deviation	.945	
	Skewness	391	.277
	Kurtosis	.459	.548
Cost	Mean	.021	.119
	Std. Deviation	1.035	
	Skewness	108	.277
	Kurtosis	434	.548
Performance of food and beverages	Mean	.120	.087
Manufacturing companies	Std. Deviation	.755	
	Skewness	402	.277
	Kurtosis	252	.548

Table 4.25: Normality Test of the dependent and Independent Variables

To corroborate the skewness and kurtosis results, the graphical analysis results showed the line representing the actual data distribution closely follow the diagonal in the normal Q-Q plot as shown in figures 4.1 to 4.5, suggesting normal distribution (Hair, Tatham, Anderson & Black, 2006). In q-q plot, or the normal probability plot, the observed value for each score is plotted against the expected value from the normal distribution, where, a sensibly straight line suggests a normal distribution (Pallant, 2010). By and large, if the points in a q-q plot depart from a straight line, then the assumed distribution is called into question (Aas & Haff, 2006).



Figure 4.1: Q-Q plot of lead-time



Figure 4.2: Q-Q plot of Risk assessment



Figure 4.3: Q-Q plot of cost



Figure 4.4: Q-Q plot of performance



Figure 4.5: Q-Q plot of service quality

4.8 Multiple regression results

The study used multiple regression analysis to determine the linear statistical relationship between the independent and dependent variables of this study. All four null hypothesis as stated in chapter one of this study were tested using regression models.

a) Test of hypothesis 1: There is a positive significant influence of cost on the performance of food and beverages manufacturing companies in Kenya.

The researcher conducted regression analysis so as to determine the influence of cost on the performance of food and beverages manufacturing companies in Kenya. The hypothesis to test for this specific objective was:

 $H0_1$ There is a positive significant influence of cost on the performance of food and beverages manufacturing companies in Kenya.

The linear regression model showed $R^2 = 0.352$ which means that 35.2% change of performance of food and beverages manufacturing companies in Kenya can be explained by a unit change of cost. The result is shown in Table 4.26.

 Table 4.26: Model Summary of cost

Model	R	R Square	Adjusted R Square	Std. Error of the
				Estimate
1	.600 ^a	.360	.352	.18366

a. Predictors: (Constant), cost

From the results there was an indication that one unit change in cost translates to 35.2% change of performance of food and beverages manufacturing companies in Kenya.

Therefore, cost has influence on performance of food and beverages manufacturing companies in Kenya.

Further test on ANOVA shows that the significance of the F-statistic (18.173) is less than 0.05 since p value, p=0.00, as indicated in Table 4.27. This implies that there is a positive significant relationship between cost and performance of food and beverages manufacturing companies in Kenya.

Mode	el	Sum of	df	Mean Square	F	Sig.
		Squares				
	Regression	8.494	1	8.494	18.173	.000 ^b
1	Residual	33.652	72	.467		
	Total	38.146	73			

Table 4.27: ANOVA^a of cost

a. Dependent Variable: performance

b. Predictors: (Constant), cost

Further test on the beta coefficients of the resulting model, the constant α = 0.176, if the independent variable of cost is held constant then there will be a positive performance of food and beverages manufacturing companies in Kenya by 0.176. The regression coefficient for cost was positive and significant at is significant at the 0.05 level (β = 0.427) with a t-value=5.338 (p-value<0.001). As shown in Table 4.28.

Table 4.28: Coefficients^a of cost

Model		Unstandardize	ed	Standardized	t	Sig.
		Coefficients		Coefficients		
		В	Std. Error	Beta		
1	(Constant)	.176	.080		2.210	.030
1	cost	.427	.080	.600	5.338	.000

a. Dependent Variable: performance

This implies that for every 1 unit increase in cost, performance of food and beverages manufacturing companies in Kenya is predicted to increase by 0.427 units and therefore H_1 is accepted. From the study it was revealed that cost affects performance of food and beverages manufacturing companies. These study findings are in agreement with the study of Selviaridis and Spring (2007) who noted that one important determinant of the decision is cost comparison between alternative options. Costs associated with performing logistics activities in-house and investment in capital assets is traded-off against service provider fees and the lowest cost solution should then be selected (Langley, 2015). However, cost is not the single most important decision variable and logistics service issues are also considered (Lucie & Hudziak, 2012). For instance, Maltz (1994a) examined the relative impact of cost and service on the decision to outsource warehousing and found that organisations were reluctant to use third-party warehousing due to customer service considerations.

b) Test of hypothesis 2: There is a positive significant influence of lead-time on the performance of food and beverages manufacturing companies in Kenya.

The researcher conducted regression analysis so as to examine the influence of lead-time on the performance of food and beverages manufacturing companies in Kenya. The hypothesis to test for this specific objective was:

 $H0_2$ There is a positive significant influence of lead-time on the performance of food and beverages manufacturing companies in Kenya.

The linear regression model showed $R^2 = 0.566$ which means that 56.6% change of performance of food and beverages manufacturing companies in Kenya can be explained by a unit change of lead-time. The result is shown in Table 4.29.

Table 4.29: Model Summary of lead-time

Model	R	R Square	Adjusted R Square	Std. Error of the
				Estimate
1	.756 ^a	.572	.566	.18748

a. Predictors: (Constant), Lead time

From the result there was an indication that one unit change in lead-time translates to 56.6% change of performance of food and beverages manufacturing companies in Kenya and therefore, lead-time has influence on performance of food and beverages manufacturing companies in Kenya. More test on ANOVA showed that the significance of the F-statistic (38.525) is less than 0.05 since p value, p=0.00, as indicated in Table 4.30. This implies that there is a positive significant relationship between lead-time and performance of food and beverages manufacturing companies in Kenya.

Table 4.30: ANOVA^a of lead-time

Model		Sum of	df	Mean Square	F	Sig.
		Squares				
	Regression	13.296	1	13.296	38.525	.000 ^b
1	Residual	24.850	72	.345		
	Total	38.146	73			

a. Dependent Variable: performance

b. Predictors: (Constant), Lead time

Additional test on the beta coefficients of the resulting model, the constant α = 0.140, if the independent variable of lead-time is held constant then there will be a positive performance of food and beverages manufacturing companies in Kenya by 0.140. The regression coefficient for lead-time was positive and significant at is significant at the 0.05 level ($\beta = 0.538$) with a t-value=7.577 (p-value<0.001). As shown in Table 4.31.

Model		Unstandardiz	ed	Standardized	t	Sig.
		Coefficients		Coefficients		
		В	Std. Error	Beta		
1	(Constant)	.140	.068		2.049	.044
	Lead-time	.538	.071	.756	7.577	.000

 Table 4.31: Coefficients^a of lead-time

a. Dependent Variable: performance

This implied that for every 1 unit increase in lead-time, performance of food and beverages manufacturing companies in Kenya is predicted to increase by 0.538 units and therefore H_2 is accepted. From the result it showed that lead-time affects performance of food and beverages manufacturing companies in Kenya. Thus, this study finding is in harmony with the study of Stewart (1995); Vishal *et al.* (2013) who found out that, an increase in delivery performance is possible through a reduction in lead-time attributes such as on-time delivery, on time orders fill and order completeness.

c) Test of hypothesis 3: There is a positive significant influence of service quality on the performance of food and beverages manufacturing companies in Kenya.

The study was conducted using regression analysis so as to assess the influence of service quality on the performance of food and beverages manufacturing companies in Kenya. The hypothesis to test for this specific objective was:

H0₃ There is a positive significant influence of service quality on the performance of food and beverages manufacturing companies in Kenya.
The linear regression model showed $R^2 = 0.543$ which means that 54.3% change of performance of food and beverages manufacturing companies in Kenya can be explained by a unit change of service quality. The result is shown in Table 4.32.

Table 4.32: Model Summary of service quality

Model	R	R Square	Adjusted R Square	Std. Error of the
				Estimate
1	.741 ^a	.550	.543	.18852

a. Predictors: (Constant), Service quality

From the result, it was observed that one unit change in service quality translated to 54.3% change of performance of food and beverages manufacturing companies in Kenya. Thus, service quality has influence on performance of food and beverages manufacturing companies in Kenya.

Additional test on ANOVA showed that the significance of the F-statistic (87.840) is less than 0.05 since p value, p=0.00, as indicated in Table 4.33. This implied that there was a positive significant relationship between service quality and performance of food and beverages manufacturing companies in Kenya.

Model		Sum of	df	Mean Square	F	Sig.
		Squares				
	Regression	20.963	1	20.963	87.840	.000 ^b
1	Residual	17.183	72	.239		
	Total	38.146	73			

Table 4.33: ANOVA^a of service quality

a. Dependent Variable: performance

b. Predictors: (Constant), Service quality

Further test on the beta coefficients of the resulting model, the constant α = 0.125, if the independent variable of service quality is held constant then there will be a positive performance of food and beverages manufacturing companies in Kenya by 0.125. The regression coefficient for service quality was positive and significant at is significant at the 0.05 level (β = 0.613) with a t-value=9.372 (p-value<0.001) as shown in Table 4.34.

Model		Unstandardiz	ed	Standardized	t	Sig.
		Coefficients		Coefficients		
		В	Std. Error	Beta		
	(Constant)	.125	.057		2.205	.031
1	Service quality	.613	.065	.741	9.372	.000

Table 4.34: Coefficients^a of service quality

a. Dependent Variable: performance

This implied that for every 1 unit increase in service quality, performance of food and beverages manufacturing companies in Kenya is predicted to increase by 0.613 units and therefore, H₃ is accepted. From the study, it was observed that service quality influence the performance of food and beverages manufacturing companies in Kenya and thus, companies consider service quality of logistics providers before outsourcing logistics activities. The study findings concurred with the study of Davis and Mentzer (2006) who eluded that service quality is commonly noted as a critical prerequisite and determinant of competitiveness for establishing and sustaining satisfying relationships with customers. Attention to service quality can make an organization different from other organizations and gain a lasting competitive advantage.

d) Test of hypothesis 4: There is a positive significant influence of risk assessment on the performance of food and beverages manufacturing companies in Kenya.

The study was conducted using regression analysis so as to establish the influence of risk assessment on the performance of food and beverages manufacturing companies in Kenya. The hypothesis to test for this specific objective was:

H0₄ There is a positive significant influence of risk assessment on the performance of food and beverages manufacturing companies in Kenya.

The linear regression model showed $R^2 = 0.579$ which means that 57.9% change of performance of food and beverages manufacturing companies in Kenya can be explained by a unit change of risk assessment. The result is shown in Table 4.35.

Model	R	R Square	Adjusted R Square	Std. Error of the
				Estimate
1	.765 ^a	.585	.579	.15226

Table 4.35: Model Summary of risk assessment

a. Predictors: (Constant), Risk assessment

Based on the study findings, it was observed that one unit change in risk assessment translated to 57.9% change in of performance of food and beverages manufacturing companies in Kenya thus, risk assessment has positive influence on performance of food and beverages manufacturing companies in Kenya. Another test on ANOVA showed significance of the F-statistic (17.662) is less than 0.05 since p value, p=0.00, as indicated in Table 4.36. This implied that there was a positive significant relationship between risk assessment and performance of food and beverages manufacturing companies in Kenya.

Table 4.36: ANOVA [*] of risk assessmen
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Model		Sum of	df	Mean Square	F	Sig.
		Squares				
	Regression	7.514	1	7.514	17.662	.000 ^b
1	Residual	30.632	72	.425		
	Total	38.146	73			

a. Dependent Variable: performance

b. Predictors: (Constant), Risk assessment

Additional test was conducted on the beta coefficients, the constant α = 0.156, if the independent variable of risk assessment is held constant then there will be a positive performance of food and beverages manufacturing companies in Kenya by 0.156. The regression coefficient for risk assessment was positive and significant at is significant at the 0.05 level (β = 0.544) with a t-value=6.4 (p-value<0.001) as shown in Table 4.37.

Table 4.37: Coefficients^a of risk assessment

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		В	Std. Error	Beta		
	(Constant)	.156	.076		2.067	.042
1	Risk	.544	.085	.765	6.400	.000
	assessment					

a. Dependent Variable: performance

This implied that for every 1 unit increase in risk assessment, performance of food and beverages manufacturing companies in Kenya is predicted to increase by 0.544 units and

therefore H_4 is accepted. Based on the study findings, it was found that risk assessment affects the performance of food and beverages manufacturing companies in Kenya and thus, it is important when outsourcing logistics activities to consider risk assessment. This study finding was in harmony with Aron *et al.* (2005) that through risk assessment, a company is able to reveal the risks associated with logistics service provision and put in place appropriate mitigating measures. Through risk assessment, logistics outsourcing can be seen as a way of reducing a company's risk by sharing it with suppliers or service providers. Investment in logistics equipment and networks always incorporates a great deal of risks and by outsourcing company can spread its risks across a number of suppliers (Ellramet *et al.*, 2008).

e) Overall regression model

The regression analysis showed a strong relationship, $R^2=0.632$ which showed that 63.2% of change in performance of food and beverages manufacturing companies in Kenya can be explained by a change of one unit of all the predictor variables jointly. This is shown on Table 4.38.

Table 4.38: Model Summary^b of overall regression model

Model	R	R Square	Adjusted R Square	Std. Error of the
				Estimate
1	.798 ^a	.637	.632	.16532

a. Predictors: (Constant), Risk assessment, Lead time, cost, Service quality

c. Dependent Variable: performance

This result indicated that predictor variables such risk assessment, lead-time, cost and service quality affects the performance of food and beverages manufacturing companies in Kenya positively. This result concurred with the study of Vishal *et al.* (2013) that the success of manufacturing organizations majorly relies on the efficiency and

effectiveness of their logistics performance in controlling cost, reducing delivery lead times, sustaining quality and achieving customer satisfaction. Further test on ANOVA showed that the significance of the F-statistic (24.007) is less than 0.05 since p value, p=0.00, as indicated in Table 4.39.

Model		Sum of	df	Mean Square	F	Sig.
		Squares				
	Regression	22.197	4	5.549	24.007	.000 ^b
1	Residual	15.949	69	.231		
	Total	38.146	73			

Table 4.39: ANOVA^a of overall regression model

a. Dependent Variable: performance

b. Predictors: (Constant), Risk assessment, Lead time, cost, Service quality

This implied that there was a positive significant relationship between independent variables and performance of food and beverages manufacturing companies in Kenya. Thus, risk assessment, cost, service quality and lead-time are important factors when outsourcing logistics activities from 3PL providers. These study findings corresponded with the studies of Vishal *et al.* (2013); Ngonela *et al.* (2014) and SoonHu (2010) that in the competitive and dynamic environment, manufacturing companies are looking for ways of enhancing efficiency and productivity, reducing cost, ensuring timely delivery, improving service quality and risk assessment which remains a challenge to manufacturing companies in maintaining their competitive edge. Finally, the estimated multiple regression model to estimate performance was indicated in Table 4.40.

		Unstandardized Coefficients		Standardized Coefficients		
			Std.			
Model		В	Error	Beta	t	Sig.
1	(Constant)	.141	.056		2.503	.015
	Cost	.275	.080	.387	3.423	.001
	Lead-time	.395	.093	.537	4.235	.000
	Service quality	.550	.104	.665	5.268	.000
	Risk assessment	.360	.090	.441	3.999	.000

Table 4.40: Coefficientsa of overall regression model

a. Dependent Variable: performance

Performance of companies= $0.141 + 0.275X_1 + 0.395X_2 + 0.55X_3 + 0.360X_4$

Where;

0.141=constant

0.275=Cost

0.395=Lead-time

0.55=Service quality

0.36=Risk assessment

The coefficients $\beta_{1=} 0.275$, $\beta_{2}= 0.395$, $\beta_{3}=0.55$ and $\beta_{4}=0.36$ are significantly different from 0, with p values 0.001, 0.000, 0.000, and 0.000 respectively, and are less than p=0.05 as summarized in Table 4.40.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

This chapter provides a summary of the major findings of the study. It also draw conclusions and recommendations for practice and suggestions for areas of further research based on the results of this study.

5.2 Summary

The overall objective of this study was to investigate on influence of outsourcing 3PL providers on the performance of food and beverages manufacturing companies in Kenya. In particular, the study sought to determine the influence of cost on the performance of food and beverages manufacturing companies in Kenya, to examine influence of lead-time on the performance of food and beverages manufacturing companies in Kenya, to assess the influence of service quality on the performance of food and beverages manufacturing companies in Kenya and to establish the influence of risk assessment on the performance of food and beverages manufacturing companies in Kenya.

5.2.1 Influence of cost on the performance of food and beverages manufacturing companies in Kenya

Cost was one of the determinants used to measure the performance of food and beverages manufacturing companies in Kenya. The study used transactional cost and logistics providers' cost as indicators. Based on the study, it was found out that transportation and distribution costs, customs clearance, document processing, freight forwarding, tracking and tracing affected performance of food and beverages manufacturing companies in Kenya. However, these costs are regarded as transactional costs and they provided a major guide to decision when food and beverages manufacturing companies outsource 3PL providers. Thus, food and beverages manufacturing companies in Kenya outsource logistics activities when transactional costs of producing in-house are higher and that outsourcing of logistics activities from 3PL would increase the company's profitability.

In addition, the study revealed that agency or administrative fees, handling and processing fees affected the performance of food and beverages manufacturing companies in Kenya. Therefore, food and beverages manufacturing companies in Kenya would outsource 3PL providers whose administrative, handling and processing fees are relatively lower in order for them to break-even and eventually increase profit margins. Finally, it was revealed from study that there was a positive correlation between cost and performance of food and beverages manufacturing companies. Food and beverages manufacturing companies considered cost as a key factor in decision making when selecting 3PL providers. If Food and beverages manufacturing companies in Kenya do not select the right 3PL partner, there is a great possibility of cost escalation which adversely affects the overall performance of the company.

5.2.2 Influence of lead-time on the performance of food and beverages manufacturing companies in Kenya

Based on the study, lead-time was measured using on-time delivery and delivery reliability indicators. It was established that order processing rate and high order fulfilment rate would increase the performance of food and beverages manufacturing companies and therefore, companies would choose 3PL providers that would help them to improve performance. Likewise, the study found out that inventory replenishment affected performance of food and beverages manufacturing companies to prevent stock outs, stabilise prices and increase sales volume. Thus, food and beverages manufacturing companies would outsource 3PL providers whose inventory replenishment rate is high.

In addition, the study observed that delivery speed, delivery to location and delivery planning affected performance of food and beverages manufacturing companies. Hence, companies would consider delivery speed, delivery to location and delivery planning as a way of reducing lead-time thereby increasing their performance. Companies would make decisions to outsource 3PL providers whose delivery speed is high and who can deliver to the required destination on time as planned. Also, from the study findings it was observed that there was a strong positive correlation between lead-time and performance of manufacturing companies in Kenya. This was an indication that food and beverages manufacturing companies considered lead-time when outsourcing logistics activities. Logistics providers whose lead-time is short are given high consideration while those with low performance rate are avoided. Therefore, lead-time reduction can be viewed as a coordination enabler in supply chain in enhancing the overall performance of food and beverages manufacturing companies in Kenya.

5.2.3 Influence of service quality on the performance of food and beverages manufacturing companies in Kenya

The study used service quality as one of the predictors on the performance of food and beverages manufacturing companies in Kenya. The study used reliability and responsiveness as indictors. From the study findings it was noted that, timeliness, consistency and accuracy of service delivery affected performance of food and beverages manufacturing companies. Therefore, food and beverages manufacturing companies who are capable of providing timely and accurate services. Also, the study observed that willingness to help customers, offer prompt services to the customers, flexibility of service delivery affected performance of food and beverages manufacturing companies. Attention to service quality can differentiate an organization from another and thus gain competitive advantage.

Moreover, the study revealed that there was a positive relationship between quality service and performance of food and beverages manufacturing companies in Kenya. Service quality is commonly noted as a critical prerequisite and determinant of competitiveness for establishing and sustaining satisfying relationships with customers. Therefore, food and beverages manufacturing companies in Kenya consider quality service in decision making for outsourcing 3PL providers.

5.2.4 Influence of risk assessment on the performance of food and beverages manufacturing companies in Kenya

With regard to risk assessment, the study used risk identification and risk measurement as indicators. Based on the results it was found out that, delay in logistics service delivery and logistics service provider capacity affected performance of food and beverages manufacturing companies in Kenya. This is because delay of logistics service might cause shortage of essential materials required in production process and therefore food and beverages manufacturing companies considered risk identification when selecting 3PL providers. Also, Logistics service providers who are capable of meeting supply expectations of the companies are put into consideration. Similarly, logistics provider system was identified as a strategy of mitigating risk. Thus, care should be taken since some strategies may adversely introduce risks in other areas. Moreover, the study showed that loss or damage of assets or goods, interruptions of service levels, loss of income and liability incurred affected performance of food and beverages manufacturing companies. Therefore, risk may cause loss of or damage to assets, loss of income, interruption of service levels, cost overruns, schedule delays, poor process performance, liabilities incurred and damage repair costs or injuries.

Finally, the study showed that there was a strong positive correlation between risk assessment and performance food and beverages manufacturing companies in Kenya. This was an indication that risk assessment is an important aspect when outsourcing logistics activities. Therefore, food and beverages manufacturing companies in Kenya considered risk assessment of 3PL providers before outsourcing logistics activities. Through risk assessment, logistics outsourcing can be seen as a way of reducing a company's risk by sharing it with suppliers or service providers. Investment in logistics

equipment and networks always incorporates a great deal of risks and therefore, it is better for a company to outsource than invest.

5.3 Conclusion

From the study findings, it could be concluded that cost had a positive significant influence on performance of food and beverages manufacturing companies in Kenya. The study showed that transportation and distribution costs, customs clearance, document processing, freight forwarding, tracking and tracing affected performance of food and beverages manufacturing companies in Kenya. Thus, these costs are regarded as transactional costs and they provide a major decision when food and beverages manufacturing companies outsource 3PL providers. Hence, food and beverages manufacturing companies outsource logistics activities when transactional costs of producing in-house are higher than outsourcing same service. Further, agency or administrative fees, handling and processing fees affected the performance of food and beverages manufacturing companies in Kenya. Therefore, food and beverages manufacturing companies in Kenya would outsource 3PL providers whose agency or administrative fees, handling and processing fees are relatively lower in order for them to break-even and increase overall performance of the company.

Equally, from the study it could be concluded that lead-time had a strong positive correlation in the performance of food and beverages manufacturing companies in Kenya. It was established that order processing rate, high order fulfilment rate, inventory replenishment, delivery speed, delivery to location and delivery planning would improve the performance of food and beverages manufacturing companies in Kenya and therefore, companies would choose 3PL providers that would help them to improve their performance.

On service quality, the study concludes that there was a positive relationship between quality service and performance of food and beverages manufacturing companies in Kenya. The study revealed that timeliness, consistency and accuracy of service delivery, willingness to help customers, prompt services to the customers and flexibility of service delivery affected performance of food and beverages manufacturing companies in Kenya. Therefore, food and beverages manufacturing companies outsource 3PL providers who are capable of providing timely and accurate services. Thus, attention to service quality is critical and should be considered by an organization to make it different from other organizations and gain a lasting competitive advantage.

Finally on risk assessment, the study concludes that there was a strong positive correlation between risk assessment and performance of food and beverages manufacturing companies in Kenya. This was an indication that risk assessment was an important aspect when selecting 3PL providers. Therefore, food and beverages manufacturing companies considered risk assessment of 3PL providers before outsourcing logistics activities. Also, the study concluded that delay in logistics service delivery and logistics service provider capacity, logistics provider system, loss or damage of assets, interruptions of service levels, loss of income and liability incurred affected performance of food and beverages manufacturing companies. Thus, through risk assessment, logistics outsourcing can be seen as a way of reducing a company's risk by sharing it with suppliers or service providers.

5.4 Recommendations

5.4.1 Recommendations to the managers of food and beverages manufacturing companies

The study established that cost, lead-time, service quality and risk assessment influence positively performance of food and beverages manufacturing companies in Kenya. Therefore, the study recommends that it would be appropriate for management to consider cost, lead-time, service quality and risk assessment as a criteria of outsourcing 3PL providers for improving performance of food and beverages manufacturing companies in Kenya. Also, the study recommends that companies should only perform in-house logistics activities where the cost is lower than outsourcing from 3PL providers

because cost directly affects the overall performance of the company. In addition, the study recommends that food and beverages manufacturing companies in Kenya should outsource logistics activities from 3PL providers who assist them to reduce their delivery lead-times such as high order processing rate, high order fulfilment rate and high delivery speed. Further, the study recommends that food and beverages manufacturing companies in Kenya should consider outsourcing 3PL providers who are capable of providing timely and accurate services as this would enable companies to improve service quality. Hence, service quality could make companies differentiate themselves from the others and gain competitive advantage and thus improve their overall performance. Lastly, the study recommends that food and beverages manufacturing companies should conduct risk assessment when outsourcing 3PL providers. Through risk assessment, food and beverages manufacturing companies can reduce company's risk by planning, mitigating and sharing with service providers.

5.4.2 Recommendations to the policy makers

Manufacturing companies in Kenya play a vital role towards attainment of Vision 2030 and therefore, study recommends that the policy makers such as the Government of Kenya, Kenya Ports, Kenya Bureau of Standards and Kenya Association of Manufacturers should partner to ensure that policies that regulate manufacturing sector are harmonized. These policies include: importation guidelines, customs tariffs, quality standards, licensing and infrastructure. In overall, these policies affect cost of goods and services, lead-time, service quality and risk of doing business transactions and therefore the study recommends that 3PL providers should be incorporated in policy formulation.

5.4.3 Recommendations to the stakeholders

Manufacturing companies in Kenya have been experiencing problems in the performance of their production and operations management and therefore this study recommends that food and beverages and other manufacturing companies should outsource 3PL providers as a strategy of improving companies' performance. In determining the 3PL provider to select, cost, lead-time, service quality and risk are vital because they contribute to the performance of a company.

5.5 Areas for further research

The study was confined to a literature review that only proposes cost, lead-time, service quality, risk assessment and the theories that support these four variables. Thus, empirical work that actually demonstrates the whole of performance of food and beverages manufacturing companies in Kenya is beyond the scope of the four variables identified in the study. Therefore, similar study should be conducted using different variables to establish which other variables affects the performance of food and beverages manufacturing companies in Kenya. Similarly, the data was collected from a single sector of manufacturing industry in Kenya. There are various sectors of manufacturing companies in Kenya such as building, construction and mining; chemical and allied; energy, electrical and electronics; leather and footwear; metal and allied; motor vehicle and accessories; paper and board; pharmaceutical and medical equipment; plastic and rubber; textiles and apparels; timber, wood and furniture; service and consultancy. Thus, informant representatives of participating food and beverages manufacturing companies may be biased.

This study recommends a similar research to be conducted from multiple informants groups of manufacturing sectors to come up with a variety of outcomes. Likewise, the study adopted cross-sectional research design which was limited to point-in-time assessment. Therefore, future research can be conducted using longitudinal research so as to identify factors which contribute to the performance of manufacturing companies in Kenya with regard to outsourcing of 3PL providers. Also, the data collected was limited to only food and beverages manufacturing companies who were registered members of the Kenya Association of Manufacturers in 2015 which changes from time to time and therefore a similar study can be conducted in future.

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APPENDICES

Appendix I: Letter of Authorization

Date:

To Managing Director

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NAIROBI

Dear Sir/Madam,

RE: ACADEMIC RESEARCH DATA: "INFLUENCE OF OUTSOURCING THIRD-PARTY LOGISTICS ON THE PERFORMANCE OF FOOD AND BEVERAGES MANUFACTURING COMPANIES IN KENYA"

I am a student at Jomo Kenyatta University of Agriculture & Technology (JKUAT) pursuing a Ph.D in Supply chain management. I am required to undertake a thesis whose title is as indicated above as partial fulfillment for the award of the doctoral degree. I am kindly requesting for your assistance in making my research a success by granting permission to collect relevant data of your organization from your Supply Chain staff. I would like to assure your office that all the data collected will be treated with utmost confidentiality and will be used exclusively for the purposes of this academic research.

I am looking forward to your kind consideration and at the same time wishing your esteemed organization success in all her endeavors.

Yours sincerely,

Julius Wambua

Appendix II: Letter of Introduction

Date:

То

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Dear Sir/Madam,

RE: COLLECTION OF RESEARCH DATA

I am a student at Jomo Kenyatta University of Agriculture & Technology (JKUAT) pursuing a Ph.D in Supply chain management. I am carrying out a research on "Influence of outsourcing third-party logistics on the performance of food and beverages manufacturing companies in Kenya". I am in the process of gathering relevant data for the purpose of this study. You have been identified as one of the collaborators and a key respondent in this study and I would like to kindly invite you to participate in my PhD research. I therefore write to request for your invaluable assistance towards making this study a success by taking time off your busy schedule to respond to the attached questionnaire.

The information collected and used in the PhD Dissertation will be kept strictly confidential, and you will remain completely anonymous throughout data processing. The final report will be made available to you once all analyses are completed. It will be appreciated if you can fill the questionnaire within the next one week to enable early finalization of the study. I thank you very much in advance for your consideration, time and responses. Thank you

Yours sincerely,

Julius Wambua

Appendix III: Questionnaire

This questionnaire is aimed at collecting data required for a study entitled "Influence of outsourcing third-party logistics providers on the performance of food and beverages manufacturing companies in Kenya" in partial fulfillment of the requirements for the award of PhD in Supply Chain Management of Jomo Kenyatta University of Agriculture and Technology. The questionnaire forms an integral part of the study and respondents are kindly requested to complete it and to give any additional information they may feel is necessary for the study. The data required is needed for academic purpose only and will be treated with strict confidentiality.

PART A

3.

ORGANIZATIONAL DATA

Please provide the following information regarding your organization.

1. Company name (optional)

2. What type of products manufactured? (tick as appropriate)

What is the ownership of the company? (tick one)						
c)	Both	[]				
b)	Beverages	[]				
a)	Food	[]				

a) Local []
b) Foreign []
c) Both []

4. Wha	at markets are served by your	products? (tick)	
a)	Domestic markets only	[]	
b)	Foreign markets only	[]	
c)	Both Domestic and Foreign	[]	
5.	Does your company perform	its logistics activiti	ies in-house?
	a) Yes	[]	
	b) No	[]	
6.	Does your company outsourd	ce logistics services	?
	c) Yes	[]	
	d) No	[]	
7.	If yes to (6) above, which log	gistics services does	s your company outsource?
	a) Freight forwarding		[]
	b) Customs clearance		[]
	c) Transport services		[]
	d) Warehousing		[]
	e) Distribution services		[]
	f) Any other services	(Please specify)	

- 8. If yes to (6) above, do you outsource all your logistic activities from a single or multiple logistics companies?
 - a) Single []
 - b) Multiple []

PART B

Cost

Please indicate the extent to which the cost elements below affect the performance of your company. Please record your answer by ticking in the spaces provided, by the scale indicator (1=not at all, 2=small extent, 3=moderate, 4=large extent, 5=very large extent)

Statement	1	2	3	4	5
Transactional cost					
a) Document processing					
b) Forwarding freight rate					
c) Customs clearance					
d) Transportation and distribution					
e) Tracking and tracing					
f) Warehousing					
Logistics service providers cost					
g) Agency/administration fees					
h) Handling and processing fees					
	C			C	

Please suggest any other cost/logistics activities that affect the performance of your

company.....

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Lead-Time

Please indicate the extent to which lead time activities below affect the performance of your company. Please record your answer by ticking in the spaces provided, by the scale indicator (1=not at all, 2=small extent, 3=moderate, 4=large extent, 5=very large extent)

Statement		2	3	4	5
On-time delivery					
a) Order processing rate					
b) Order fulfillment rate					
c) Inventory replenishment					
Delivery reliability					
d) Delivery speed					
e) Delivery to location (on-time in-full)					
f) Delivery planning					

Please suggest any other lead-time activities that affect the performance of your company.....

Service Quality

Please indicate the extent to which service quality factors below affect the performance of your company. Please record your answer by ticking in the spaces provided, by the scale indicator (1=not at all, 2=small extent, 3=moderate, 4=large extent, 5=very large extent)

Statement		2	3	4	5
Reliability					
a) Timeliness					
b) Consistency					
c) Accuracy					
Responsiveness					
d) Willingness to help					
e) Prompt attention to requests					

f) Problem resolution			
g) Flexibility			
h) Complaint handling			

Please suggest any other service quality activities that affect the performance of your company.....

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Risk assessment

Please indicate the extent to which risk assessment factors below affect the performance of your company. Please record your answer by ticking in the spaces provided, by the scale indicator (1=not at all, 2=small extent, 3=moderate, 4=large extent, 5=very large extent)

Statement		2	3	4	5
Risk identification					
a) Delay in logistics service delivery					
b) Logistics service provider capacity					
c) Logistics providers systems					
Risk measurement					
d) Loss or damage of assets or goods					
e) Loss of income					
f) Interruption of service levels					
g) Liabilities incurred					

Please suggest any other risk assessment activities that affect the performance of your

company.....

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Performance of Food and Beverages Manufacturing Companies in Kenya

Please rate the performance of your company regarding the following indicators. Record your answer by ticking in the spaces provided, by the scale indicator (1=not at all, 2=small extent, 3=moderate, 4=large extent, 5=very large extent)

Performance of company		2	3	4	5
Market share					
a) Percentage of your market share					
b) Availability of your products in the market					
c) Competitiveness of your products					
d) Loyalty of your customers					
Profitability					
e) The organization growth over time					
f) Asset base /facilities					
g) Income/revenue earnings					

Please suggest other ways which you can rate the performance of your company

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Appendix IV: List of Food and Beverages Manufacturing Companies that participated in the study

NO.	NAME	LOCATION
1	Kenya Meat Commission	Athi-River
2	Kenya Tea Packers Ltd (KETEPA)	Kericho
3	Githunguri Dairy Farmers Co-operative Society	Kiambu
4	Equator Bottlers Ltd	Kisumu
5	Kibos Sugar and Allied Industries	Kisumu
6	Coast Silos (K) Ltd	Mombasa
7	Coastal Bottlers Ltd	Mombasa
8	Milly Fruit Processors Ltd	Mombasa
9	Mombasa Maize Millers	Mombasa
10	Pwani Oil Products Ltd	Mombasa
11	T.S.S. Grain Millers Ltd	Mombasa
12	Nairobi Bottlers Ltd	Nairobi
13	Africa Spirits Ltd	Nairobi
14	Alpha Fine Foods ltd	Nairobi
15	Alpine Coolers Ltd	Nairobi
16	Aquamist Ltd	Nairobi
17	Bakers Corner Ltd	Nairobi
18	British American Tobacco Kenya Ltd	Nairobi
19	C. Dormans Ltd	Nairobi
20	Cadbury Kenya Ltd	Nairobi
21	Deepa Industries Ltd	Nairobi
22	East African Breweries Ltd	Nairobi
23	East African Malt Ltd	Nairobi
24	East African Sea Food Ltd	Nairobi
25	East African Seed Co. Ltd	Nairobi
26	Edible Oil Products	Nairobi
27	Excel Chemicals Ltd	Nairobi
28	Farmers Choice Ltd	Nairobi
29	Fresh Produce Exporters Association of Kenya	Nairobi
30	Giloil Company Ltd	Nairobi
31	Highlands Canners Ltd	Nairobi
32	Kapa Oil Refineries Ltd	Nairobi
33	Kenya Breweries Ltd	Nairobi
34	Kenya Nut Company Ltd	Nairobi
35	Kenya Seed Company Ltd	Nairobi
36	London Distillers (K) Ltd	Nairobi

37	Nestle Foods Kenya Ltd	Nairobi
38	Pembe Flour Mills Ltd	Nairobi
39	Trufoods Ltd	Nairobi
40	Keroche Industries Ltd	Naivasha
41	Menengai Oil Refineries Ltd	Nakuru
42	Kenafric Bakery	Ruiru
43	Bidco Africa Ltd (Formally Bidco Oil Refineries Ltd)	Thika
44	Broadway Bakery Ltd	Thika
45	Brookside Diary Ltd	Thika
46	Del Monte Kenya Ltd	Thika
47	Kenblest Ltd	Thika