

Influence of Logistics Outsourcing Services on Supply Chain Performance in Commercial State Corporation in Nandi County, Kenya

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ABSTRACT: In government agencies specifically the commercial state corporations, logistics remain a problem that has continually derailed the success of the procurement and supply chain process. However, it remains unclear on the role the outsourcing has played in promoting supply chain performance in these corporations. This study sought to establish the influence of logistic outsourcing services on supply chain performance in commercial state corporations in Nandi County, Kenya, specifically to establish the influence of transport outsourcing on supply chain performance in commercial state corporations in Nandi County; determine the influence of the distribution outsourcing on supply chain performance and to examine the influence of warehousing outsourcing on supply chain performance in commercial state corporations in Nandi County, Kenya. Descriptive research design was adopted and the study target population was the 14 commercial state corporations from which census was conducted. Self-administered questionnaires were used in the study as data collecting instruments. Qualitative and quantitative data was analyzed using SPSS. The study findings revealed that transport outsourcing, distribution outsourcing, and warehousing outsourcing have a positive significant influence on supply chain performance. The study concluded that prequalified commercial state corporation should improve on approach to transport outsourcing, distribution outsourcing, and warehousing outsourcing. The study recommends that Commercial State Corporation embrace Transport outsourcing techniques, transportation, Transport Management Software technology, outsourcing transportation, operational control analysis and Transport outsourcing.

KeyTerms: Distribution Outsourcing, Supply Chain Performance, Transport Outsourcing and Warehousing Outsourcing

I. INTRODUCTION

Logistics according to Silva (2013) is the part of a supply chain involved with the forward and reverse flow of goods, services, cash, and information. It includes the management of all transportation material handling, warehouse inventory, order processing and distribution, third-party logistics, and reverse logistics in logistics activities (Jefferys, 2012). Logistics encompasses all of the information and material flows throughout an organization. It includes everything from the movement of a product or from a service that needs to be rendered, through to the management of incoming raw materials, production, the storing of finished goods, its delivery to the customer and after-sales service (Ittmenn & King, 2010). The examples of logistics practices include warehousing, transportation, information management and material/inventory handling. When an organization is unable to have these service done from within its means or it considers it cheaper to have the services from other companies, it can consider outsourcing the services. This is known as logistics outsourcing. It is the act of subcontracting logistics activities to firms equipped to provide the services (Lynch, 2004). Wachira, Brookes and Haines (2016) defined outsourcing as movement of the organization's internal activities, decisions and responsibilities to external provider(s), thus logistics outsourcing involves the contracting of the logistics functions of the firm to other parties. These parties include first party logistics providers, second service party providers, third-party service providers and fourth-party service providers.

II. Statement of the Problem

A report from the Auditor General (2018) showed that over 1 trillion Kenya Shillings are lost every year in government spending and 60% of these misappropriations occur as a result of poor procurement processes mainly in the state corporations. A further report by Trademark East Africa (2018) revealed that commercial state corporations in Kenya faced a challenge in logistics and despite Kenya being ranked among the top promising countries in Kenya in logistics the public sector contributed very little. Government procurement stands to be one of the major practices that largely contribute to economic growth and development. In Kenya, government procurement amongst State Corporation accounts for a significant in the economy. Most of the commercial state corporations, logistics outsourcing is made without proper consultations a matter that has seen the procurement and supply chain in these companies continue to derail (Anyango, 2014). From the evidence portrayed herein, logistics outsourcing is a subject that has been given minimal attention as far as research is concerned. The studies reviewed show mixed results while others focused on different industries and in different locales.

III. General Objective

The main aim of the study is to assess the influence of logistic outsourcing services on the supply chain performance of state corporations in Nandi County, Kenya.

Specific Objectives

- i. To establish the influence of transport outsourcing on supply chain performance in commercial state corporations in Nandi County, Kenya.
- ii. To determine the influence of the distribution outsourcing on supply chain performance in commercial state corporations in Nandi County, Kenya
- iii. To examine the influence of warehousing outsourcing on supply chain performance in commercial state corporations in Nandi County, Kenya.

Research Hypotheses

- i. **H₀₁:** Transport outsourcing has no significant influence on supply chain performance in commercial state corporations in Nandi County, Kenya
- ii. **H₀₂:** Distribution outsourcing has no significant influence on supply chain performance in commercial state corporations in Nandi County, Kenya
- iii. **H₀₃:** There is no significance influence of warehousing outsourcing on supply chain performance in commercial state corporations in Nandi County, Kenya

IV. LITERATURE REVIEW

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 and 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 behavioural and 14 outcome-based incentives to motivate the agent to act in the interests of the principal (Logan, 2000). The PAT suggests an “inter-firm contracting perspective” on outsourcing logistics, 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 behavioural incentives in the contract between the shipper and the outsourcing logistics provider (Herbert et al., 2007).

The Network perspective Theory (NT)

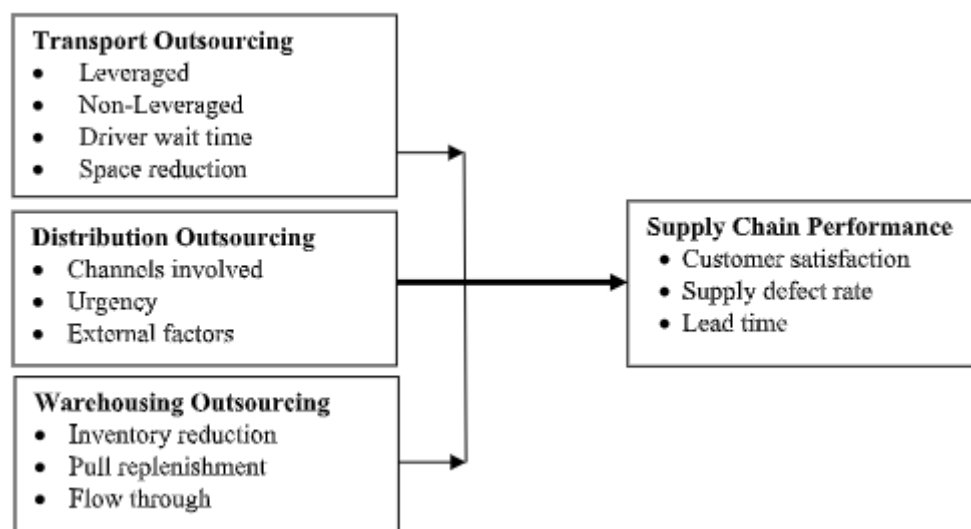
The performance of a firm depends not only on how efficiently it cooperates with its direct partners, but also on how well these partners cooperate with their own business partners in cooperative relationships. The firm’s continuous interaction with other players becomes an important factor in the development 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 inter-organisational 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 supply chain performance to map activities, actors, and resources in a supply chain.

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). Conceptual Framework

Conceptual Framework



Independent Variables

Dependent Variable

Figure 1: Conceptual Framework

V. RESEARCH METHODOLOGY

Research Design

Research design is defined as strategies put in place to combine different components of a research with an aim of meeting the research objectives (Mugenda & Mugenda, 2013). Research design is also defined as the blue print or guidelines that outline the procedures to be undertaken in data collection, analysis and reporting Adan, (2015). This study utilized the descriptive research design The descriptive research helps probe specific aspects of study variables by collecting the information of a set of parameters known beforehand that was desirable to collect data about (Churchill & Iacobucci, 2005).

Target Population

A population can be defined as including all people or items with the characteristic one wish to understand (Kothari, 2004). This study targeted 14 commercial state corporations with their offices, representatives or branches in the County as in Appendix V.

Sampling Frame

Sampling frame or "sample frame" has been defined as the actual set of units from which a sample has been drawn. For this study, the sample was drawn from the organization structures of the Commercial State Corporations in Nandi County. The major focus for this study will be the procurement officials will from the Commercial State Corporations in Nandi County

Sampling Technique

According to Noy (2016), statistical sampling techniques are strategies applied by researcher during the statistical sampling process. The study used census technique due to the size of the population. According to Lohr (2014) a census is an investigation of each unit in a population.

Data Collection Instruments

The data collection instrument is the device used to collect research data from a sample group. The study relied on primary data that was collected using semi structured questionnaire that will be administered by drop and pick methods.

VI. RESEARCH FINDINGS AND DISCUSSIONS

Descriptive Analysis

The study sought to assess the influence of logistic outsourcing services on the supply chain performance of state corporations in Nandi County, Kenya. The main aspects of logistics outsourcing models studied included transport outsourcing, distribution outsourcing and warehousing outsourcing while the dependent variable was supply chain performance of commercial State Corporation in Nandi County.

Influence of Transport Outsourcing on Supply Chain Performance of commercial State Corporation in Nandi County.

This section is in line with the first study objective which sought to determine the influence of Transport outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County. Table 1.0 shows the statistical results in details.

Table 1.0: Descriptive Statistics on Transport outsourcing

Transport outsourcing	N	Minimum	Maximum	Mean	Std. Deviation
How important is transportation to the logistics quality of your firm	31	1	5	3.7619	1.00752
Outsourced logistics leverage industry relationships and shipment volumes to get lower prices	31	2	5	3.5952	.88509
Outsourcing transfers the risks of transportation operations to the logistics provider	31	1	5	3.7619	1.12205
Outsourcing transportation protects the organization from penalties.	31	2	5	4.1667	.76243

Influence of Logistics Outsourcing Services on Supply Chain Performance in Commercial State Corporation in Nandi County, Kenya

Transport Management	31	1	5	3.6667	1.07446
Software technology provides the custom data you desire					
Outsourcing transportation increases operational control	31	1	5	3.5952	1.10563
Outsourcing transportation make sure transportation operations never fall victim to the constantly changing supply chain environment.	31	1	5	3.8439	1.1115
Valid N (listwise)	31				

From Table 1.0, the findings of the study established that the participants strongly agreed on importance of transportation to the logistics quality of your firm, with a mean of 3.7619 within standard deviation of 1.00752. This concurred with a study by Mugo (2015) to determine the effects of outsourcing logistics services on operational efficiency, a case study of Del Monte, Thika Branch. In the rapidly changing business environment Logistics Services play a vital role in the Operational Efficiency of an organization. In the manufacturing industry the companies tend to focus on their core activities which are producing raw materials or finished goods for their consumers so as to ensure quality products reach their clients. The study concluded that outsourcing of logistics services has an encouraging impact on the operational efficiency. The outsourcing practices being adopted by DMKL resulted in increased productivity, organizational effectiveness, increased profits, continuous improvement, improved quality and improved quality of work life and thus outsourcing of these processes was an ideal solution that helps the firm expand internationally and operate on a much larger scale. It also found that outsourcing resulted in decreased operating costs, improved customer satisfaction, increased productivity, timely delivery of services to clients, and reduced lead time, improved profits and faster response to customer demands. This indicated that the performance of the firms was influenced by the outsourcing practices adopted by the firms.

The findings established that outsourced logistics leverage industry relationships and shipment volumes to get lower prices, with a mean 3.5952 within a standard deviation of 0.88509. This concurred with a study by Antonioli, Ferreira, Carvalho, Tiradentes and Batista, (2015) on the outsourcing of logistics transport. The study aimed at analysing the transport sector in Brazil and the criteria for outsourcing of business transport through a case study in a Brazilian industry of leather sector, which outsourced its transport distribution process. As a result of this process, this company could save 60% of its transport costs and improved its service level, which generated an additional 3.5% on its revenue. These research findings are relevant in terms of transportation outsourcing decision criteria, being a strategic decision in operations; thus, in managerial terms, this outsourcing process could make the company's distribution transportation capability more flexible and agile.

It was also established that outsourcing transfers the risks of transportation operations to the logistics provider with a mean of 3.7619 within a standard deviation of 1.12205. Mugo (2015) conducted a research to determine the effects of outsourcing logistics services on operational efficiency, a case study of Del Monte, Thika Branch. The outsourcing practices being adopted by DMKL resulted in increased productivity, organizational effectiveness, increased profits, continuous improvement, improved quality and improved quality of work life and thus outsourcing of these processes was an ideal solution that helps the firm expand internationally and operate on a much larger scale. It also found that outsourcing resulted in decreased operating costs, improved customer satisfaction, increased productivity, timely delivery of services to clients, and reduced lead time, improved profits and faster response to customer demands. This indicated that the performance of the firms was influenced by the outsourcing practices adopted by the firms.

It was also established that outsourcing transportation protects the organization from penalties with a mean of 4.1667 within a standard deviation of 0.76243. According to Qureshi, Dinesh and Pradeep, (2014) conducted a study which aimed at purpose was to model the key variables of logistics outsourcing relationship between shippers and logistics service providers and to study their influence on productivity and competitiveness of the shipper company. An interpretive structural modelling based approach was used to model the variables of logistics outsourcing relationship, These variables were classified as enablers; those which boost the "relationship bond" between shippers and logistic

service providers and outcome variables arising out of outsourcing relationship between shippers and logistics service providers. Findings were that a numbers of enablers influence the shipper's relationship with logistic service providers that result in to productivity enhancement and competitiveness.

Further the respondents concurred with a mean of 3.6667 within standard deviation of 1.07446 that Transport Management Software technology provides the custom data you desire. According to a study by Mugo (2016) which sought to determine logistics outsourcing and the supply chain performance of mobile phone service providers in Kenya. The study looked into logistics outsourcing and the performance of the supply chain by collecting primary data through the use of an interview guide. It is evident that there is a relationship between logistics outsourcing and supply chain performance in the mobile phone service providers. All the four mobile phone companies surveyed have outsourced most of their logistics functions. It has also been noted that the use of performance measures by the four mobile phone companies is prevalent in addition to having robust contracts that spell out the service level agreements. The study concludes that the future of logistics outsourcing is bright in the mobile phone service providers and there is a drive towards the use of logistics outsourcing as a strategy in order to aggregate costs, reduce risks, pursue core business activities and hence gain a competitive advantage in the cut throat business of mobile telephony

It was also established that outsourcing transportation increases operational control analysis with a mean of 3.5952 within a standard deviation 1.10563. This concurred with Magutu, Chirchir and Magutu (2013) who explored outsourcing practices to the performance of large manufacturing firms Nairobi, Kenya. The firms opted to outsource their services due to its advantages and its possible influence on organizational performance, as it enables the firms to focus on its core competencies. The outsourcing practices adopted by the large manufacturing firms will in the long run determine their survival as they would seek to reduce operating costs, improved customer satisfaction and timely delivery of services to clients which in turn increase productivity and reduce lead time and improved profits.

Further the respondents concurred with a mean of 3.8439 within standard deviation of 1.1115 that outsourcing transportation makes sure transportation operations never fall victim to the constantly changing supply chain environment. Outsourcing of services has become a common practice among large manufacturing firms worldwide and this is due to the various benefits that accrue to a firm as a result of outsourcing. Contracting out production of goods and services to a firm with competitive advantages in terms of reliability, quality and cost was found out to be the main driver of outsourcing. A study Magutu, Chirchir and Magutu (2013) explored outsourcing practices to the performance of large manufacturing firms Nairobi, Kenya. The firms opted to outsource their services due to its advantages and its possible influence on organizational performance, as it enables the firms to focus on its core competencies. The outsourcing practices adopted by the large manufacturing firms will in the long run determine their survival as they would seek to reduce operating costs, improved customer satisfaction and timely delivery of services to clients which in turn increase productivity and reduce lead time and improved profits.

Influence of Distribution Outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County

This section is in line with the second study objective which sought to establish the influence of Distribution outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County. Table 1.1 shows the statistical results in details

Table 1.1: Descriptive Statistics on Distribution outsourcing

Distribution outsourcing	N	Minimum	Maximum	Mean	Std. Deviation
The firm has embraced adoption of modern storage infrastructure i.e. cold rooms and racking system	31	1	5	3.6429	1.03173
Fleet tracking tools have increased vehicle visibility	31	2	5	4.0000	.82639
The firms frequently outsources customer order delivery services	31	1	5	3.9762	1.02382
Dispatching of orders is done in outsourced warehouses	31	2	5	4.3095	.71527
Valid N (listwise)	31				

From the findings as in Table 1.1, it was established that the firms embraced adoption of modern storage infrastructure i.e. cold rooms and racking system with a mean of 3.6429 within a standard deviation 1.03173. A study by Chebet (2017) analyses the effect of information communication technology outsourced innovations on customer satisfaction in the service industry, Nairobi Kenya. The study therefore concludes that customers will be more satisfied with after sale services that are innovative enough hence making it easier to solve problems that may arise after installing of services. The findings also revealed that an efficient 24-hour help desk service can positively influence customer satisfaction. The study concluded that a toll free 24-hour desk help service that's is easy to use and with not communication breakdown would go a long way in helping address the customers issues regardless of the time.

Also it was established that Fleet tracking tools have increased vehicle visibility shown by a mean of 4.0 within a standard deviation of 0.826. This differed with a study by Solakivi, Töyli, Engblom, & Ojala, (2011) aimed at exploring the current state and future expectations concerning the usage of the outsourcing of logistics operations in SMEs, and to analyse and quantify the relationships between logistics outsourcing, costs and performance.. In general, the findings were that management should not expect automatic gains from logistics outsourcing, and should rather analyse the company-specific characteristics that support or in some cases suffer from the outsourcing decision.

It was also established that the firms frequently outsources customer order delivery services with a mean of 3.9762 within a standard deviation 1.02382. This concurred with the study by Ngonela (2014) aimed at finding out the influence of the drivers and practices of distribution outsourcing practices among tea processing firms in Bomet County. The study found that the firms use several distribution outsourcing practices with own or in-house transport being the most common. The study concluded that there exists a drive towards the use of distribution 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.

It was also established that the Dispatching of orders is done in outsourced warehouses shown by a mean of 4.3095 within a 0.71527. Outsourcing has become an important aspect of the overall strategy of any organization. However, despite the many benefits accrued to outsourcing the level of outsourcing in an organization affects management activities in one way or another and extensive outsourcing can lead to loss of internal controls in the organization. A

study by Bernard (2019) to establish the effect of outsourcing on supply chain performance at Cadbury Kenya Limited found that supplier' selection criteria influences supply chain performance most followed by supplier-firm relationship and information system integration. The study recommended that Cadbury Kenya Limited should improve their suppliers' selection criteria by considering suppliers outsourcing cost, reliability, efficiency, experience, performance history, quality of services and delivery performance.

Influence of Warehousing Outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County

This section is in line with the third study objective which sought to establish the influence of Warehousing outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County. Table 1.2 shows the statistical results in details.

Table 1.2: Descriptive Statistics on Warehousing Outsourcing

	N	Minimum	Maximum	Mean	Std. Deviation
Outsourcing warehousing allows access to information on inventory	31	2	5	4.0476	.85404
Outsourcing warehousing enables the firm to concentrate on developing the business	31	1	5	4.0476	1.01097
Expertise and knowledge of the industry from 3PL providers is useful	31	2	5	3.9048	.93207
Outsourcing 3PL warehousing Leads to Less damages to commodities due to proper storage	31	1	5	3.9048	1.10010
Outsourcing 3PL warehousing providers provide the firm with the Ideal distribution location	31	2	5	4.0000	.85540
Outsourcing warehousing allows access to information on deliveries.	31	2	5	3.9048	.98301
Valid N (listwise)	31				

Table 1.2, it was established that Outsourcing warehousing allows access to information on inventory with a mean of 4.0476 within a standard deviation of 1.068. This concurred with a study by Sindiga, Paul and Mbura (2019) to establish the role played by warehousing management practices such as warehouse planning, supplier relationships, outsourcing and inventory management in the performance of construction firms within the county of Nairobi. The findings showed that the performance of construction firms in Nairobi County was significantly and positively affected by warehouse management practices. It concluded that procurement planning had the greatest impact on the performance of construction firms in Kenya, with outsourcing and inventory management taking second and third place respectively. According to the study, the supplier relationship has been found to have the least influence on construction firms ' performance in Kenya.

It was established that Outsourcing warehousing enables the firm to concentrate on developing the business indicated with a mean of 4.0476 within a standard deviation 1.01097. Inventories occupy the most strategic position in the

structure of working capital of most firms and enterprises and are an important component to the success and expenditure reduction of a firm. They make up an important part of a manufacturing firm's production process as they facilitate continued production. A study by Mulumba (2016) to assess the relationship between inventory management practices and performance of manufacturing firms in Kenya using a case of agro-chemical firms. The study sought to determine the effects of net transactions approach to inventory management, effects of the Just in Time (JIT), effects of Vendor Managed Inventory (VMI) and to determine the influence of forecasting and replenishment on performance of manufacturing firms in Kenya. The study found that net transactions approach's main concern is planning for all the resources that the organization needs to run its operations and hence improve its performance. The top management of manufacturing firms in Kenya should adopt pull method whereby goods are produced in each manufacturing stage only as they are needed. Vendor managed inventory systems should be adopted in order to enable manufactures to reduce or exclude inventory leading to higher performance. Forecasting should be geared towards making prediction of the future demand ensuring that performance is high.

It was established that Expertise and knowledge of the industry from 3PL providers is useful with a mean of 3.9048 within a standard deviation 0.93207. Logistics has become even more complicated when the organization has to repatriate the goods to a different often manufacturing country due to the legal and shipping requirements. It differed with a study by Samson (2018) examined how reverse transportation affects Imported Furniture Distributing Firms in Nairobi County. It established that reverse transportation significantly affected the performance of imported furniture distributing firms in Nairobi County as most of the furniture distribution firms had forward-looking supply systems and as such did not anticipate back-flow of items. Most of them arranged their distribution networks within the County and seldom dealt with reverse logistics of their products unless they were special cases as they felt these were costly to transport.

It was established and Outsourcing 3PL warehousing leads to less damages to commodities due to proper storage given with a mean of 3.9048 within a standard deviation 1.10010. This concurred with study by Mulumba (2016) to assess the relationship between inventory management practices and performance of manufacturing firms in Kenya using a case of agro-chemical firms. The study found that net transactions approach's main concern is planning for all the resources that the organization needs to run its operations and hence improve its performance. The top management of manufacturing firms in Kenya should adopt pull method whereby goods are produced in each manufacturing stage only as they are needed. Vendor managed inventory systems should be adopted in order to enable manufactures to reduce or exclude inventory leading to higher performance. Forecasting should be geared towards making prediction of the future demand ensuring that performance is high.

It was also established that Outsourcing 3PL warehousing providers provide the firm with the Ideal distribution location with a mean of 4.0000 and standard deviation 0.85540. According to Browne and Gomez, (2011) who conducted a study on the impact of urban distribution operations of upstream supply chain constraints. The study aimed at finding out the impact of the urban distribution activities of the supply chain constraints. The study revealed that urban distribution operations are highly costly hence there is a need of outsourcing the distribution channels. The study recommended that operations of a company can be effective if it is fully equipped, hence this can only be outsourced to reduce the cost of operations. The study however did not focus on the supply chain performance, hence a gap that is addressed in the current study

It was also established that Outsourcing warehousing allows access to information on deliveries with a mean of 3.9048 within a standard deviation of 0.98301. Warehousing outsourcing includes space assurance, stock format, design, and stock arrangement (Ballou, 2003). Warehousing for the most part guarantees adaptability in conveyance that is conveying the correct item in the correct amount. Warehousing additionally guarantees cost proficient task by conveying the item at the correct cost, and in impeccable request and condition

Influence of Supply Chain Performance on Supply Chain Performance of Commercial State Corporation in Nandi County

This section entails an analysis of the dependent variable (Supply Chain Performance). It examined the perceptions held on the Supply Chain Performance of Commercial State Corporation in Nandi County. Table 1.3 shows the descriptive statistics and results in details.

Table 1.3: Descriptive Statistics on Supply Chain Performance

	N	Minimum	Maximum	Mean	Std. Deviation
Outsourcing practices results to increased productivity	31	1	5	3.5952	1.10563
Outsourcing frees up organizations from investments in infrastructure that make up the bulk of a back end process' capital expenditure	31	1	5	3.6429	1.03173
Outsourcing frees up organizations from investments in people that make up the bulk of a back end process' capital expenditure	31	2	5	4.0000	.82639
Outsourcing practices leads to organizational effectiveness	31	1	5	3.9762	1.02382
The organization profits increased as a result of outsourcing practices	31	2	5	4.3095	.71527
Outsourcing of non-core functions such as administration helps to put the focus back on the core functions of the business	31	2	5	4.0952	.82075
Valid N (listwise)	31				

As outlined in Table 1.3, it was established that the Outsourcing practices results to increased productivity concurred with a mean of 3.5952 within a standard deviation of 1.10563. This concurred with Mugo (2015) who conducted a research to determine the effects of outsourcing logistics services on operational efficiency, a case study of Del Monte, Thika Branch. In the rapidly changing business environment Logistics Services play a vital role in the Operational Efficiency of an organization. In the manufacturing industry the companies tend to focus on their core activities which are producing raw materials or finished goods for their consumers so as to ensure quality products reach their clients. The study concluded that outsourcing of logistics services has an encouraging impact on the operational efficiency.

It was also established that outsourcing frees up organizations from investments in infrastructure that make up the bulk of a back end process' capital expenditure as shown by with a mean of 3.6429 within a standard deviation 1.03173. This concurred with Antonioli, Ferreira, Carvalho, Tiradentes and Batista, (2015) carried out a study on the outsourcing of logistics transport. The study aimed at analysing the transport sector in Brazil and the criteria for outsourcing of business transport through a case study in a Brazilian industry of leather sector, which outsourced its transport distribution process. As a result of this process, this company could save 60% of its transport costs and improved its service level, which generated an additional 3.5% on its revenue. These research findings are relevant in terms of transportation outsourcing decision criteria, being a strategic decision in operations; thus, in managerial terms, this outsourcing process could make the company's distribution transportation capability more flexible and agile.

In addition, it was established that outsourcing practices leads to organizational effectiveness with a mean of 3.9762 within a standard deviation of 1.02382. A study by Mulumba (2016) to assess the relationship between inventory management practices and performance of manufacturing firms in Kenya using a case of agro-chemical firms. The study sought to determine the effects of net transactions approach to inventory management, effects of the Just in Time (JIT), effects of Vendor Managed Inventory (VMI) and to determine the influence of forecasting and replenishment on performance of manufacturing firms in Kenya. The study found that net transactions approach's main concern is planning for all the resources that the organization needs to run its operations and hence improve its performance. The

top management of manufacturing firms in Kenya should adopt pull method whereby goods are produced in each manufacturing stage only as they are needed. Vendor managed inventory systems should be adopted in order to enable manufactures to reduce or exclude inventory leading to higher performance. Forecasting should be geared towards making prediction of the future demand ensuring that performance is high

It was also established that the organization profits increased as a result of outsourcing practices with a mean of 4.3095 within a standard deviation of 0.71527. This concurred with Antonioli, Ferreira, Carvalho, Tiradentes and Batista, (2015) carried out a study on the outsourcing of logistics transport. The study aimed at analysing the transport sector in Brazil and the criteria for outsourcing of business transport through a case study in a Brazilian industry of leather sector, which outsourced its transport distribution process. As a result of this process, this company could save 60% of its transport costs and improved its service level, which generated an additional 3.5% on its revenue. These research findings are relevant in terms of transportation outsourcing decision criteria, being a strategic decision in operations; thus, in managerial terms, this outsourcing process could make the company's distribution transportation capability more flexible and agile.

Finally, it was established that Outsourcing of non-core functions such as administration helps to put the focus back on the core functions of the business with a mean of 4.0952 and standard deviation of 0.82075. The study by Mugo (2016) sought to determine logistics outsourcing and the supply chain performance of mobile phone service providers in Kenya. The study looked into logistics outsourcing and the performance of the supply chain by collecting primary data through the use of an interview guide. The study concludes that the future of logistics outsourcing is bright in the mobile phone service providers and there is a drive towards the use of logistics outsourcing as a strategy in order to aggregate costs, reduce risks, pursue core business activities and hence gain a competitive advantage in the cut throat business of mobile telephony The advantages of logistics outsourcing are major and its impact on the performance of the supply chain far more supersedes the challenges faced in the implementation of the same.

VII. Correlations Analysis

The Pearson product-moment correlation coefficient was used to obtain a measure of the strength of association between two variables (Independent and Dependent). The Pearson correlation coefficient, r , can take a range of values from +1 to -1. A value of 0 indicates that there exists no association between the independent and the dependent variables while a value greater than 0 indicates a positive association meaning that an increase in the value of one variable leads to the increase in the other. A value less than 0 indicate a negative association meaning that a decrease in the value of one variable would lead to a decrease in the value of the other.

Correlation Analysis for Transport outsourcing and Supply Chain Performance of Commercial State Corporation in Nandi County

This section outlines the results of correlation analysis between Transport outsourcing and Supply Chain Performance of Commercial State Corporation in Nandi County (Table 1.4). The findings were interpreted and discussed accordingly.

Table 1.4: Correlations between Transport outsourcing and Supply Chain Performance

		Initiation	Performance
Transport Outsourcing	Pearson Correlation	1	.655**
	Sig. (2-tailed)		.000
	N	31	31
Supply Chain Performance	Pearson Correlation	.655**	1
	Sig. (2-tailed)	.000	
	N	31	31

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

The correlation analysis results in table 1.4 revealed that there was a positive and a strong significant association between Transport outsourcing and Supply Chain Performance of as supported by ($r = 0.655$, $p = 0.000$). This implied that both Transport outsourcing and Supply Chain Performance change in the same direction. . A study Magutu, Chirchir and Magutu (2013) explored transport outsourcing practices to the performance of large manufacturing firms Nairobi, Kenya. The firms opted to outsource their services due to its advantages and its possible influence on

organizational performance, as it enables the firms to focus on its core competencies. The outsourcing practices adopted by the large manufacturing firms will in the long run determine their survival as they would seek to reduce operating costs, improved customer satisfaction and timely delivery of services to clients which in turn increase productivity and reduce lead time and improved profits.

Correlation Analysis for Distribution outsourcing and Supply Chain Performance of Commercial State Corporation in Nandi County

This section outlines the results of correlation analysis between Distribution outsourcing and Supply Chain Performance of Commercial State Corporations (Table 1.5). The findings were interpreted and discussed accordingly.

Table1.5: Correlations between Distribution outsourcing and Supply Chain Performance

		Execution	Performance
Distribution Outsourcing	Pearson Correlation	1	.863**
	Sig. (2-tailed)		.000
	N	31	31
Supply Chain Performance	Pearson Correlation	.863**	1
	Sig. (2-tailed)	.000	
	N	31	31

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

The correlation analysis results in table 1.5 revealed that there was a positive and a strong significant relationship between Distribution outsourcing and Supply Chain Performance of Commercial State Corporations as supported by ($r=0.863$, $p=0.000$). This implied that both Distribution outsourcing and Supply Chain Performance change in the same direction. A study by Ngonela (2014) aimed at finding out the influence of the drivers and practices of distribution outsourcing practices among tea processing firms in Bomet County. The study found that the firms use several distribution outsourcing practices with own or in-house transport being the most common. The study concluded that there exists a drive towards the use of distribution outsourcing as a strategy to reduce costs, to pursue core business activities, reduce risks and gain competitive advantage.

Correlation Analysis for Warehousing outsourcing and Supply Chain Performance of Commercial State Corporation in Nandi County

This section outlines the results of correlation analysis between Warehousing outsourcing and Supply Chain Performance of Commercial State (Table 1.6). The findings were interpreted and discussed accordingly.

Table1.6: Correlations between Warehousing outsourcing and Supply Chain Performance

		Monitoring	Performance
Warehousing Outsourcing	Pearson Correlation	1	.391*
	Sig. (2-tailed)		.010
	N	31	31
Supply Chain Performance	Pearson Correlation	.391*	1
	Sig. (2-tailed)	.010	
	N	31	31

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

The correlation analysis results in table 1.6 revealed that there was a positive and a significant relationship between Warehousing outsourcing and Supply Chain Performance of Commercial State as supported by ($r=0.391$, $p=0.010$). This implied that both Warehousing outsourcing and Supply Chain Performance change in the same direction. A study by Sindiga, Paul and Mbura (2019) to establish the role played by procurement management practices such as procurement planning, supplier relationships, outsourcing and inventory management in the performance of construction firms

within the county of Nairobi showed that the performance of construction firms was significantly and positively affected by procurement management practices. It concluded that procurement planning had the greatest impact on the performance of construction firms in Kenya, with outsourcing and inventory management taking second and third place respectively.

VIII. Regression Analysis

The multiple linear regressions were undertaken for the purpose of examining the influence of logistic outsourcing services on the supply chain performance of state corporations. The model summary on table 1.7 indicated a multiple linear correlation coefficient R of 0.935 which indicated that the independent variables (Transport outsourcing, Distribution outsourcing and Warehousing outsourcing) had a positive correlation with the dependent variable. The coefficient of determination (R Square) of 0.875 indicated that the independent variable constituted 87.5% of the variance in the dependent variable. These results therefore explained 87.5% while the 12.5% is explained by other variables outside the scope of this study.

Table 1.7: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.935 ^a	.875	.865	.1826

a. Predictors: (Constant), Transport Outsourcing, Distribution Outsourcing, Warehousing Outsourcing

b. Dependent Variable: Supply Chain Performance

In order to examine on whether the data was good fit for regression model, the ANOVA was undertaken and the data being good fit for data was tested at 5% level of significance. Since from the table 1.8 the observed p value was 0.000 which was less than 0.05 (5%), it therefore implied that the regression model was good fit for data. This implies that the probability of the regression model giving wrong prediction effect on the dependent variable is 0% which is less than the set level of significance of 5%. Therefore, the regression model was adopted.

Table 1.8: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.841	3	2.947	89.303	.000 ^b
	Residual	1.267	27	.033		
	Total	10.108	30			

a. Dependent Variable: Supply Chain Performance

b. Predictors: (Constant), Transport Outsourcing, Distribution Outsourcing, Warehousing Outsourcing

To examine the influence of the independent variables on the dependent variables, multiple regression analysis was as shown in table 1.9. The optimal model was;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

$$Y = 0.068 + 0.289 X_1 + 0.870 X_2 - 0.174 X_3 + 0.324$$

Where; Y represents Supply Chain Performance

X₁ represents Transport outsourcing

X₂ represents Distribution outsourcing

X₃ represents Warehousing outsourcing

e represents Error Term

The regression coefficient of 0.289 for the Transport outsourcing implied that a unit increase in Transport outsourcing with the other variables left constant would lead to a 0.289 increase in Supply Chain Performance. The regression

coefficient of 0.870 for Distribution outsourcing implied that a unit increase in Distribution outsourcing would lead to a 0.870 increase in Supply Chain Performance with the other independent variables kept constant. The regression coefficient of - 0.174 for the Warehousing outsourcing implied that a unit increase in Warehousing outsourcing with the other variables left constant would lead to a 0.174 decrease in Supply Chain Performance with the other independent variables kept constant.

Table1.9: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	.068	.324			.209	.835
Transport Outsourcing	.289	.046	.419		6.277	.000
Distribution Outsourcing	.870	.076	.759		11.501	.000
Warehousing Outsourcing	-.174	.086	-.139		-2.037	.049

a. Dependent Variable: Supply Chain Performance

Hypothesis Testing

The first hypothesis was tested under the null hypothesis;

H_{01} : Transport outsourcing has no significance influence on Supply Chain Performance of Commercial State Corporation in Nandi County.

The hypothesis was tested by determining the relationship between Transport outsourcing and Supply Chain Performance using multiple regressions whose results are shown on Table 4.16. The test was done at a significant level 0.05. The test results show that there exists a statistically significant correlation between Transport outsourcing and Supply Chain Performance ($\beta = 0.289$, $\rho = 0.000 < 0.05$). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant influence of Transport outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County.

H_{02} : Distribution outsourcing has no significant influence on Supply Chain Performance of Commercial State Corporation in Nandi County.

The hypothesis was tested by determining the relationship between Distribution outsourcing and Supply Chain Performance using multiple regressions whose results are shown on Table 4.16. The test was done at a significant level 0.05. The test results show that there exists a statistically significant correlation between Distribution outsourcing and Supply Chain Performance ($\beta = 0.870$, $\rho = 0.000 < 0.05$). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant influence of Distribution outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County.

H_{03} : Warehousing outsourcing has no significant influence on Supply Chain Performance of Commercial State Corporation in Nandi County.

The hypothesis was tested by determining the relationship between Warehousing outsourcing and Supply Chain Performance using multiple regressions whose results are shown on Table 4.16. The test was done at a significant level 0.05. The test results show that there exists a statistically significant correlation between Warehousing outsourcing and Supply Chain Performance ($\beta = -0.174$, $\rho = 0.049 < 0.05$). The result leads to the rejection of the null hypothesis, hence a conclusion that there exists a significant influence of Warehousing outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County.

IX. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of the Study Findings

The first objective was to determine the influence of Transport outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County. Descriptive results revealed that the findings of the study established that the participants strongly agreed on importance of transportation to the logistics quality of your firm. The findings established that outsourced logistics leverage industry relationships and shipment volumes to get lower prices. It was also established that outsourcing transportation increases operational control analysis. Further the respondents concurred with that outsourcing transportation makes sure transportation operations never fall victim to the constantly changing supply chain environment. To establish the effect of Transport outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County, correlation analysis showed that there was found a positive and a strong significant association between Transport outsourcing and Supply Chain Performance. The hypothesis results indicated that there exists a statistically significant correlation between Transport outsourcing and Supply Chain Performance.

The second objective was to find out the influence of Distribution outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County. Descriptive results revealed that it was established the firm embraced adoption of modern storage infrastructure. It was also established that the firms frequently outsource customer order delivery services. The study concluded that there exists a drive towards the use of distribution outsourcing as a strategy to reduce costs, to pursue core business activities, reduce risks and gain competitive advantage. It was also established that the orders are dispatched are done in outsourced warehouses. Correlation analysis showed that there was a positive and a strong significant relationship between Distribution outsourcing and Supply Chain Performance of Commercial State Corporation in Nandi County. The hypothesis results indicated that there exists a statistically significant correlation between Distribution outsourcing and Supply Chain Performance.

The third and final objective was to find out the influence of Warehousing outsourcing on Supply Chain Performance of Commercial State Corporation in Nandi County. Descriptive results revealed that established Outsourcing warehousing allows access to information on inventory. It concluded that procurement planning had the greatest impact on the performance of construction firms in Kenya, with outsourcing and inventory management taking second and third place respectively. It was established that outsourcing warehousing enables the firm to concentrate on developing the business indicated. It was established that Expertise and knowledge of the industry from 3PL providers is useful. It was established and Outsourcing 3PL warehousing leads to less damages to commodities due to proper storage given. It was also established that Outsourcing 3PL warehousing providers provide the firm with the Ideal distribution location. Urban distribution operations are highly costly hence there is a need of outsourcing the distribution channels. It was also established that Outsourcing warehousing allows access to information on deliveries. Correlation analysis showed that there was a positive and a strong significant relationship between Warehousing outsourcing and Supply Chain Performance of Commercial State Corporation in Nandi County. The hypothesis results indicated that there exists a statistically significant correlation between Warehousing outsourcing and Supply Chain Performance.

Conclusions of the Study

The study concluded that Commercial State Corporation in Nandi County embrace Transport outsourcing and its influence on Supply Chain Performance. Results concluded that Transport outsourcing has an effect on Supply Chain Performance of Commercial State Corporation in Nandi County, as shown by correlation analysis that found a positive and a strong significant association between Transport outsourcing and Supply Chain Performance. Besides, the hypothesis test supported the same as results that there exists a statistically significant correlation between Transport outsourcing and Supply Chain Performance. The study concluded that Commercial State Corporation in Nandi County embrace Distribution outsourcing and its influence on Supply Chain Performance. As shown by the correlation and regression analysis which portrayed a positive correlation between Distribution outsourcing and Supply Chain Performance of Commercial State Corporation in Nandi County. The hypothesis results indicated that there exists a statistically significant correlation between Distribution outsourcing and Supply Chain Performance. The study concluded that Commercial State Corporation in Nandi County embrace Warehousing outsourcing and its influence Supply Chain Performance. As shown by the correlation and regression analysis which portrayed a positive correlation between Warehousing outsourcing and Supply Chain Performance. Besides the hypotheses test supported the same as the results indicated that there exists a statistically significant correlation between Warehousing outsourcing and Supply Chain Performance.

Recommendations of the Study

The study recommends that Commercial State Corporation in Nandi County embrace Transport outsourcing techniques to improve Supply Chain Performance. The study recommends that transportation be an integral part in logistics quality of the firm. Further it is recommended addition of Transport Management Software technology to provide important data desired. It is recommended outsourcing transportation because it increases operational control analysis ensures that transportation operations never fall victim to the constantly changing supply chain environment. It is recommended that Commercial State Corporation in Nandi County to utilize Transport outsourcing. The study recommends that Commercial State Corporation in Nandi County adopt modern storage infrastructure. Customers will be greatly satisfied with after sale services that are innovative enough hence making it easier to solve problems that may arise. It is recommended use of Fleet tracking tools to increase vehicle visibility. Management should not expect automatic gains from logistics outsourcing, and should rather analyse the company-specific characteristics that support or in some cases suffer from the outsourcing decision. It is further recommended for the firms to increase outsourcing of customer delivery services. It is also recommended to grow use of distribution outsourcing as a strategy to reduce costs, to pursue core business activities, reduce risks and gain competitive advantage. It is recommended that orders be dispatched from outsourced warehouses. This is because the outsourcing practices adopted by the large manufacturing firms will in the long run determine their survival as they would seek to reduce operating costs, improved customer satisfaction and timely delivery of services to clients which in turn increase productivity and reduce lead time and improved profits. The study recommended that Commercial State Corporation in Nandi County embrace Warehousing outsourcing and its influence Supply Chain Performance Recommended that Expertise and knowledge of the industry from 3PL providers is useful. It is recommend that that Outsourcing 3PL warehousing leads to less damages to commodities due to proper storage given. It is recommended that warehousing for the most part guarantees adaptability in conveyance.

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