INFLUENCE OF THIRD PARTY LOGISTICS MANAGEMENT ON PERFORMANCE OF LEVEL FOUR AND FIVE HOSPITALS IN KENYA

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Abstract

Purpose: The main objective of this study was to determine influence of third party logistics management on performance of Level Four and Five Hospitals in Kenya.

Materials and methods; the study adopted the descriptive research design. Research design is defined as a plan, structure and strategy of investigation conceived to obtain answers to research questions and control variance) a descriptive research design determines and reports the way things are and it is used whenever the data being collected is to describe persons, organizations, settings or phenomena. The design also has enough provision for protection of bias and maximized reliability. The unit of analyses of this study consisted of employees working in referral and teaching hospitals, level 5 hospitals and level 4 hospitals only in five County Governments of Kenya. The unit of observation analyses of this study consisted of facility in charge, doctors, and nurses in charge, procurement, warehousing function, distribution, functions, and quality assurance drug store officers. The initial stage in the sampling process involved the use of stratified sampling methods to categorize the hospitals into five distinctive sub-populations or strata. The study collected primary data for analysis the Primary data was obtained by the use of structured questionnaires. The process of data analysis involves data clean up and explanation. The collected research data was checked for any errors and omissions, coded, defined and then entered into Statistical Package for Social Science (SPSS Version 23), Descriptive statistics including frequency, percentages, means and standard deviation was used to analyses the findings. Descriptive statistics was used to portray the sets of categories formed from the data

Results: The study also established that Reporting 3PL warehouse management systems (WMS) give county level four and five hospitals in Kenya full visibility into stock levels, including what stock is moving off the shelf, how long things are stored for, and much more. This visibility is very reassuring for product managers who want to see where their products are at all times. Order management and processing fulfilment is a key task in 3PL. G

Recommendations: The study recommends that county hospitals who use 3PL report that they experience improvements in order fill rate and order accuracy. This is a win-win for the retail and the customer. Time savings equate to cost savings at the retailer's end. While increased accuracy equates to distribution performance with less taken to carry out delivery in various destinations.

Keywords: Third party logistics management, Delivery Scheduling, Value-Added Services, Customer requirement

1. INTRODUCTION

Background of the study

The study analyzed the influence of outsourced distribution services on performance of Level four and five Hospitals in Kenya. This chapter aims at providing sufficient information for better understanding of the study. Specifically the chapter provides information on global perspective of Outsourced Distribution Services, regional perspective and then narrows down to the local issues that the study was to address. It highlights on the background information, statement of the problem, general and specific objectives, and research questions, justification of the study, the scope of the study and the limitations of the study

According to Lysons & Farrington (2012) distribution outsourcing is often defined as engaging a third party provider to perform services for the host organization that were previously performed in-house. Third party provider refers to any entity outside the traditional supplier-carrier-consumer relationship. Within any organization, public or private, there may be valid business and strategic reasons to outsource parts of the operation so that the business can focus on its core capabilities (Liao & Rao, 2010). This process requires both an objective evaluation of internal performance and capacity, followed by a search for reliable partners that can deliver responsive services (Mwangi, 2016).

According to Raue and Wieland (2015), logistics outsourcing involves a relationship between a company and LSP (Logistic Service Provider), which, compared with basic logistics services, has more customized offerings, encompasses a broad number of service activities, is characterized by a long-term orientation, and thus has a strategic nature (Wallenburg & Goldsby 2011).

Distribution Services providers typically specialize in integrated operation, warehousing and transportation services which are scaled and customized to customers' needs based on market conditions, such as the demands and delivery service requirements for their products and materials (Cooper, 2014). The services go beyond logistics and include value-added services related to the production or procurement of goods such services that integrate parts of the supply chain (Potter & Christopher, 2015). When this integration occurs, the provider is then called a third-party supply chain management provider or logistics service provider (Mallik, 2010).

According to Kebo (2013) outsourced logistics service providers specialize in the logistics functions described as third logistics providers. These organizations are popular in the private sector as solution providers to firms interested in outsourcing some or all aspects of their supply chain management functions (Wallenburg & Goldsby, 2011). The outsourced logistics partners act as a supply chain integrator that assembles and manages the resources, capabilities, and technology of its own organization with those of complementary service providers to deliver a comprehensive distribution services. They provide a single interface for the client and are the primary distribution services providers (Johnston & Cheng, 2012).

According to Serem (2014), the distribution of vaccines and medicines has for a long time shown potential for outsourcing. Today, a number of counties have started contracting local transport companies or third party logistics providers (3PLs) to supplement their in-house distribution operations (Yadav, 2011). Key aspect of logistics that has proved of great importance for pharmaceuticals is distribution. Distribution is an important activity in the integrated supply-chain management of pharmaceutical products (USAID, 2014). As logistics management is gaining momentum in other industries, pharmaceutical sector has also realized the importance of logistics as a source of strategic advantage. Pharmaceutical and healthcare companies operate within a highly dynamic market. Several factors relate to the efficacy of distribution of pharmaceuticals (Yadav, 2014).

Members of the pharmaceutical supply chain have various global regulatory requirements to meet, while handling, storing, and distributing environmentally sensitive products enhances their responsibility. Their focus is to provide cold chain management for temperature sensitive pharmaceuticals to ensure that the quality and efficacy of the products will not be compromised (MOH, 2012)

Global Perspective of Outsourced Distribution Services

The fast moving and complex purchasing and distribution markets in; India, Malaysia, Thailand, Russia offer the opportunity to generate significant savings and in the same time to increase manufacturers sales through effective distribution management channels outsourced from the specialized 3pl providers (Kaluarachchi, 2010) .The rapid globalization of markets, the increases in international trade and technological advancements have dramatically improved the reach and integration of business between countries(Raue & Wieland, 2015).The strategic perspective this has created an opportunity to outsource part or entire distribution operations from company with high distribution specialization and structures(Mamad & Chahdi, 2013).

The current logistics infrastructure in China is adequate to meet the increasing demands of both local and foreign customers. Since third-party logistics (3PL) industry is in trajectory move, most of the local manufacturing companies have outsourced logistics services to provide major logistics services to their customers (Sumaedi et al., 2016). The manufacturing companies are also the suppliers of products who provide various logistics services to their local and foreign customers associated with product delivery (Liao & Rao, 2010).

According to Johnston, & Cheng (2012) Logistics providers in the United States provide outsourced fulfillment services, acting as an outsourced distribution center to support customers wholesale or retail operations. Kaluarachchi (2010) states that In addition to receiving and filling orders, logistics providers pick and pack orders according to your supply chain needs, from cross docking to repackaging incoming shipments to support manufacturer's distribution retail outlets. This includes supporting web based stores through electronic linkages from your web site to the warehouse management system (Mohamed & Azizan, 2015).

Regional Perspective of Outsourced Distribution Services

The contracted logistics providers in West Africa countries warehousing and distribution are viewed as strategic distribution approach for the supply chain operation, (Krishnamurthy & Sellamuthu 2010). The management of inventory in and out of these facilities has a material impact on both customer satisfaction and costs, (Potter & Christopher, 2015). The outsourced logistics can relieve you of these headaches, giving you access to highly qualified, professional warehouse management, as well as robust technological tools such as the integrated transport management, rule-driven communications and access to effective distribution planning and management (Mangan & Lalwani, 2016).

Across sub-Saharan Africa, tens of thousands of health centers serve rural communities; many are located hundreds of kilometers from regional facilities supplying vaccines and related supplies (Yadav, 2011). The Dangote Foundation and the Bill & Melinda Gates Foundation are contracted to improve vaccine distribution and supply chain management. Following a government-managed RFP process, a contract for outsourced distribution directly to health facilities was awarded to eHealth Africa, an NGO which beat out a number of private sectors LSPs. (Mamad & Chahdi, 2013). Vaccines are now transported directly from state or zonal cold stores to an estimated 300 health facilities in fully monitored cold chain vehicles. E-Health Africa has provided

critical support including facility mapping, route optimization, vaccine handling training and driver certification, temperature monitoring, data and stock management (Mamad & Chahdi, 2013).

According to Kaluarachchi (2010) the Contracted Warehousing and Distribution Companies in South Africa through Warehouse Management Systems utilize logistics operations supports all capabilities required including system directed put ways, replenishment, batch control, cycle counts and wave picking (Gil-Saura & Ruiz-Molina, 2011). Logistics service providers offers a wide range of logistics services including order fulfillment to businesses, distribution, project management, tracking, freight forwarding, supply chain management (Kebo, 2013).

Local Perspective of Outsourced Distribution Services

DHL is a brand that carries the business of international mail and logistics and claims to move the world. It has three sub brands namely DHL Express, DHL Global Forwarding and DHL Supply Chain (Mallik, 2010). The last brand offers tailor made solutions to contracted customers. These include outsourced distribution services such as, inbound logistics, distribution, warehousing, and sales order processing. (Krishnamurthy & Sellamuthu, 2010). These three DHL sub brands are represented in Kenya by individual companies but they work together to fulfill customers' service requirements. It is evident that DHL establishes long-term relationships with its clients. This is supported by the Unilever Kenya Limited and East Africa breweries (Rose & Rose, 2012).

The company provides mixture of 3rd party logistics (3PL) or physical logistic solution and 4th party logistics (4PL) that concentrates on outsourcing of the transport services by DHL Supply Chain and seeks to find out why it has subcontracted part of transport to different transporters. EABL is working very closely with these partners to implement integrated outsourced distribution which deliver an integrated, streamlined, and agile logistics network, all the way from end of packaging line to the distributor (Mamad & Chahdi 2013). In-line with more mature markets such as Europe, this will exploit technology to measure how well the changes are performing.

According to Yadav (2014), the medical supplies are distributed from the KEMSA's Supply Chain Centre to the door steps of each of the public facilities and testing sites. Presently, KEMSA serves Hospitals; KEMSA has the requisite transport system in place which includes outsourced transport and courier service. This ensures timely dispatch of all commodities ordered by health facilities from any corner of the country. Currently, KEMSA is responsible for all in-country distribution of health products, in addition to forecasting, procuring supplies, and providing service delivery (USAID, 2014).

Level four and five Hospitals

The Kenyan County health system services are comprised of various specialized skills, expertise and services offered by health facilities of different categorization starting with level one to five. Level four and five Hospitals facilities are the secondary referral level and offer a broad spectrum of specialized curative services (Ministry of Health, 2013). At this level, facilities are able to offer advanced services and expertise both for curative and diagnostic services. Referrals at this level are mainly from level one to three facilities that mainly offer primary health care services. The referral system links the different levels of care based on the expected services being provided through the system. The levels of care include all facilities public and private, and Faith-Based Organizations (FBO) (MOH, 2012).

Referral coordination is done at the different levels of health service delivery and includes all four types of referrals according to the Kenya Health Sector Referral Strategy. The coordination of the referral system is done at the national and county levels by a referral coordinating unit or team, and the sub-county and facility levels have an appointed referral coordinator. The sub-county-level referral coordinators ensure reinforcement of the referral system among the different levels of care (MOH, 2012).

According to Raue & Wiel (2015), hospital and healthcare supply, the facility's loading dock fills up fast each day, with bulk deliveries and small orders arriving constantly, which must then be put away in a warehouse or distributed around a campus. (Maranga, 2012) To achieve cost efficiencies, an outsourced regional warehouse and logistics provider (3PL) was mandated in the business case for stock inventory (Raue & Wieland, 2015). Outsourcing the central warehouse and distribution to a 3PL would result in regional efficiencies by, for example, reducing storage space and inventory at hospitals and freeing up the space for other hospitals' activities (Nyambura & Mwangi, 2015).

Statement of the problem

The level four and five hospitals timely deliveries function is riddled with gaps and challenges that deter effective performance with supply chains operating with limited transport capacity, which limits their ability to make last mile deliveries, and results in referral hospital collecting commodities from the next tier, KEMSA and pharmaceutical manufacturers in the supply chain (Yadav, 2014).

According to Okech and Steve (2015), with the current complex network of distribution within Level four and five Hospitals a system analysis concluded that distribution costs in the public health sector are at 30% to 50% percent above the budget requirements, with ineffective and inefficient in logistics at 20% of this cost and additional storage cost during high demands increasing to 36%, while shipment consolidation delays up to 5days. Freight payment for deliveries from manufacturers at (42%), warehouse management & operations (33%) which leads to order fulfillment delays, inventory replenishment takes 2-3 days (Ministry of Health, 2013). The higher costs were attributed to insufficient logistics infrastructure, limited information systems, and a complex network of distribution in this system, lead times were long, facility managers had very little visibility into the status of their orders, and warehouses were under-utilized, stockouts or reduction the stock levels to below minimum levels (MOH, 2012).

According to Sumaedi et al. (2016), to effectively supply level four and five hospitals with vaccines, a well-managed transport system is a critical component of the supply chain for many health systems in the region. Current practices and resources are inadequate to ensure reliable and sustainable transport support the distribution of vaccines and other medical commodities. (Raue & Wieland, 2015), the level four and five hospital in-house transport system does not meet good distribution practices, hence the study will fill this gap by establishing the factors influencing outsourced distribution services on performance of level four and five hospitals in Kenya.

Study Objectives

The study was guided by the following specific objectives:

i. To establish the effects of Delivery Scheduling on performance of level four and five hospitals in Kenya

ii. To evaluate the influence of Value-Added Services on performance of level four and five hospitals in Kenya

iii. To determine the influence of Customer requirement management on performance of level four and five hospitals in Kenya

2. LITERATURE REVIEW

Third party logistics management

According to Burke and Thomson (2012), defines that third-party logistics includes any form of outsourcing of logistics activities previously performed in house. This is when a company with its own warehousing facilities decides to employ external transportation to execute logistics activities that have traditionally been performed within an organization itself (Ghotbabadi & Feiz 2012).

Delivery scheduling is the timing or rate of delivery as required by a buyer, or as agreed between a buyer and a seller, for goods or services purchased for a future delivery period (Johnston, & Cheng, 2012). Delivery schedule adherence (DSA) is a business metric used to calculate the timeliness of deliveries from suppliers. It is a supply chain metric and forms part of the Quality, Cost, and Delivery group of performance indicators. (Kebo, 2013) To meet these new needs, 3PL providers like SCI provide value added services (VAS), to help their clients reduce costs through a variety of solutions, including the ability to customize orders, maintain product quality, and get your product to the end consumer faster, (Lysons & Farrington, 2012). Often the value-added services being offered by the supply chain provider become the determining factor in vendor selection.

According to Liao& Rao (2010), states that continuously anticipating and adjusting to discontinuities that permanently impair the value proposition of a core business with special focus on delivering customer satisfaction. Strategic resilience requires continuous innovation with respect to product structures processes.

Performance of Level Four and Five Hospitals

According to Dehghan & Jalalian (2013), supply chain performance refers to the extended supply chain's activities in meeting end-customer requirements, including product availability, on-time delivery, and all the necessary inventory and capacity in the supply chain to deliver that performance in a responsive manner. Supply chain performance crosses company boundaries since it includes basic materials, components, subassemblies and finished products, and distribution through various channels to the end customer (Daugherty, 2011).

The traditional functional organization lines such as procurement, manufacturing, distribution, marketing & sales, and research & development (Krishnamurthy & Sellamuthu, 2010). To win in the new environment, supply chains need continuous improvement. To achieve this, organizations need performance measures, or metrics, which support global performance of level four and five hospitals improvements rather than narrow company-specific or function-specific metrics which inhibit chain-wide improvements (Lysons & Farrington, 2012).

Logistics performance is the practice of moving inventory or supplies from a point of origin to a point of use in the most efficient way possible (Chen, & Tian, 2011). To ensure the effectiveness of their logistics efforts, organizations must be able to evaluate their performance. The delivery of high service quality improves corporate brands and contributes to consumer satisfaction, (Lysons & Farrington, 2012). Distribution service

is different from most other service industries in terms of who receives the service and the nature of the interaction and is applied to products, rather than people. The service supplier and the customer are physically separated. Contrary to other service industries where the service is intangible, distribution service is somewhat tangible, demonstrated by the condition and reception time of products that are being delivered (Liao & Rao, 2010).

Third Party Logistics Management

According to Arnold (2014), the 1970s significance of logistics outsourcing processes has greatly increased the activities required to accomplish various logistical functions and strategic planning process which include coordination and collaboration with the channel partners namely suppliers, intermediaries, third-party service providers and customers' increases. While historically supply efficiency was the primary concern for businesses, since the 1980s the need for agility and speed to respond to a demand trend has received increased attention both from industry and academia (Mangan & Lalwani, 2016).

Granville (2012), notes that the sphere of logistics management involves a multitude of different factors which include; transportation management, freight and inventory management, materials handling and order fulfillment. Thus the study recommending that, an effective outsourced logistics system should contributes immensely to the achievements of the business and marketing objectives of a firm. Technological advances and economic liberalization have created new opportunities for countries to harness global markets for economic growth and development. But expanded supply chains and global production networks put a new premium on moving goods in a predictable, timely, and cost-effective way (Krishnamurthy& Sellamuthu, 2010).

According to Handfield (2007), logistics outsourcing creates time and place utilities in the products and thereby helps in maximizing the value satisfaction to consumers. By ensuring quick deliveries in minimum time and cost, it relieves the customers of holding excess inventories. It also brings down the cost of carrying inventory, material handling, transportation and other related activities of distribution. Lead time is a very important component in a customer's perception of business performance; it has become an order qualifier (Rushton, 2014)
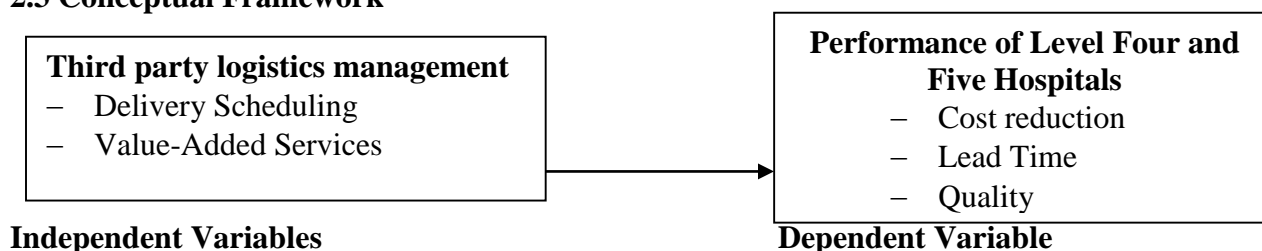
2.3 Conceptual Framework

Third party logistics management – Delivery Scheduling – Value-Added Services	→	Performance of Level Four and Five Hospitals – Cost reduction – Lead Time – Quality
Independent Variables		**Dependent Variable**

Figure 1: Conceptual framework

3. METHODOLOGY

The study adopted the descriptive research design. Research design is defined as a plan, structure and strategy of investigation conceived to obtain answers to research questions and control variance) a descriptive research design determines and reports the way things are and it is used whenever the data being collected is to describe persons, organizations, settings or phenomena. The design also has enough provision for protection of bias and

maximized reliability. The unit of analyses of this study consisted of employees working in referral and teaching hospitals, level 5 hospitals and level 4 hospitals only in five County Governments of Kenya. The unit of observation analyses of this study consisted of facility in charge, doctors, and nurses in charge, procurement, warehousing function, distribution, functions, and quality assurance drug store officers. The initial stage in the sampling process involved the use of stratified sampling methods to categorize the hospitals into five distinctive sub-populations or strata. The study collected primary data for analysis the Primary data was obtained by the use of structured questionnaires. The process of data analysis involves data clean up and explanation. The collected research data was checked for any errors and omissions, coded, defined and then entered into Statistical Package for Social Science (SPSS Version 23), Descriptive statistics including frequency, percentages, means and standard deviation was used to analyses the findings. Descriptive statistics was used to portray the sets of categories formed from the data

4. DATA ANALYSIS, PRESENTATION AND INTERPRETATION

Introduction

This chapter presents the findings of the study and refers to relevant research to support the findings of the study. The findings include demographic information about the sample and results obtained from the descriptive statistics on the influence of outsourced distribution services on performance of level four and five hospitals in Kenya 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.

Response Rate

The study targeted a sample of 78 staff in procurement in 5 selected County Government of Kenya. Out of the 78 distributed questionnaires 75 were filled and returned. This translated to a response rate of 96%. This response was good enough and representative of the population and conforms with Mugenda and Mugenda (2012) that a response rate of 70% and above is excellent. According to Mugenda (2012) and also Kothari (2012) a response rate of 50% is adequate for a descriptive study also asserted that return rates of 50% are acceptable to analyse and publish, 60% is good and 70% is very good. Based on these assertions from renowned scholars 80% and above response rate was adequate for the study (Mugenda 2011).

Table 1: Response Rate

Response	Sample size	Percentage
Returned questionnaires	75	96
Unreturned questionnaires	3	4
Total	**78**	**100**

Reliability Results

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. In this study, 10% of the questionnaires were pilot tested whereby County Government that are part of the target population but not in the sample were selected in order to get the correct feedback (Mugenda 2011). The Cronbach alpha was

calculated in a bid to measure the reliability of the questionnaire. The table evidences that all the variables were reliable since their Cronbach's alpha was above 0.7. According to Cronbach (2011); 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.

Table 2: Reliability Results

Variable	Cronbach's	No of Item	Remarks
Inbound Logistics	.701	5	Accepted
Distribution channel management	.802	5	Accepted
Third Party Logistics Management	.799	5	Accepted
Integrated Transport Systems	.782	5	Accepted
Overall	.770		

Demographic information

County Government

The respondents were requested to indicate their respective County Government of Kenya they are work for. The findings are shown in Table 3. From the finding, 21.3 % of the respondents were in Bugoma County ,22.6 % of the respondents worked in Busia County and Meru County had 20.0 % of the respondents while 17.3 % of the respondents were from Kisumu County This shows that all the county with high numbers of level 4 and 5 hospitals in County Government of Kenya were well represented thus the information collected was more reflective of the logistics operations of the entire County Government set up in Kenya.

Table 2: County Government

No	County	Frequency	Percent
1	Bugoma County	16	21.3
2	Busia County	17	22.6
3	Kakamega County	14	18.6
4	Kisumu County	13	17.3
5	Meru County	15	20.0
	TOTAL 5	**75**	**100**

Descriptive Statistics

Descriptive statistics are a set of brief descriptive coefficients that summarizes a given data set, which can either be a representation of the entire population or a sample. The measures used to describe the data set are measures of central tendency and measures of variability or dispersion.

Third Party Logistics Management

Delivery Scheduling

The study sought the respondent's level of agreement with the following statements that relate to the Influence of Delivery Scheduling on performance of level four and five hospitals in Kenya and results presented on Table 4. From the findings, majority of the respondents strongly agreed that Generating and integrating delivery

schedule, acquiring and managing the information shared commonly by all delivery people's influence delivering schedules planning with 49.33% of the respondents strongly agreeing 29.33% of the respondents agreeing and only 9.33% of the respondents disagreed, the studies further indicated that employing the multi-agent problem solving framework for the delivery scheduling problem enabled solving delivery scheduling constrains with 32.00% of the respondents strongly agreeing, 38.67% of the respondents agreeing, 18.67% of the respondents were neutral with only 4.00% disagreeing. The respondents contributed that the efficient use and management of scheduling knowledge of various levels for 3rd part logistics reduce operational inconvenience within the distribution channel with 37.33% of the respondents strongly agreeing 36.00% of the respondents agreed and 2.67% of the respondents disagreed to the statement This finding is in line with that of Mangan & Lalwani (2016), stating that by employing the distributed cooperative problem solving framework for the delivery scheduling problem, we achieved an easy incorporation of various evaluation parameters in the process of scheduling, efficient use and management of scheduling knowledge of various levels.

Table 4. Delivery Scheduling

Statements	1	2	3	4	5
Generating and integrating delivery schedule, acquiring and managing the information shared commonly by all delivery persons	1.33%	9.33%	10.67%	29.33%	49.33%
Employing the multi-agent problem solving framework for the delivery scheduling problem	4.00%	6.67%	18.67%	38.67%	32.00%
Incorporation of various evaluation parameters in the process of scheduling of different hospital deliveries.	1.33%	9.33%	8.00%	56.00%	25.33%
The efficient use and management of scheduling knowledge of various levels for 3rd part logistics reduce operational inconvenience?	2.67%	6.67%	17.33%	36.00%	37.33%

Value-Added Services

The Table 5 shows the respondents response of the level to which the agreed with the given statements that relate to the improved Value-Added Services on performance of level four and five hospitals in Kenya. From the findings, majority of the respondents strongly agreed that logistics operations in the organisation provide a dedicated distribution performance which was supported by a mean of 3.77 and standard deviation of 0.84, the study indicated that enabling a variety of logistics delivery models that improve customer service while mitigating inventory and transportation costs improves on value added service, which was supported by a mean of 3.99 and standard deviation of 0.89,further to a moderate extent respondents indicated that Health Facilities and value-added warehousing services help vendors reduce their global inventory footprint of finished goods which was supported by a 3.91 and standard deviation 0.93.

The finding in this study revealed that added services in the health facilities enhance a better collaboration within the health facilities and the vendors. This finding is in agreement to that of Wallenbur &Raue, (2011) that expeditor's value-added services range from simple to complex, enabling a variety of logistics delivery models that improve customer service while mitigating inventory and transportation costs.

Table 5. Value-Added Services

Statements	Min.	Max.	Mean	Std
Logistics operations in your organisation provide a dedicated distribution performance	2.00	4.00	3.77	0.84
Distribution services in your organisation ensure medical commodities are distributed within the right response time	1.00	4.00	4.03	0.97
Health Facilities and value-added warehousing services help vendors reduce their global inventory footprint of finished goods	2.00	4.00	3.91	0.93
Enabling a variety of logistics delivery models that improve customer service while mitigating inventory and transportation costs.	1.00	3.00	3.99	0.89

Performance of Level Four and Five Hospitals

The study sought the extent to which indicators of level of performance experienced by level four and five hospitals in Kenya in the last five years in terms Cost reduction (Ksh), Lead Time (days), Quality and Customer service (%) that is related to: Inbound Logistics, Distribution channel management, Third Party Logistics Management and Integrated Transport Systems. The implementation of outsourced distribution services was found to contribute to performance of level four and five hospitals in Kenya.

The performance in cost reduction level for the selected counties was on upward trends as the cost saving approach reduced the logistics operating in comparison to the year 2014 the cost reduced was too low at 0.07m the changed to 0.15m in the year 2015, the cost reduction improved to 0.9m in the year 2017 and finally to 1.5m the year 2018 third quarter. This implied that the implementation of the sourcing of logistics services enabled the health facilities to transfer unnecessary cost to the contracted transporters.

The Lead Time (days) for the delivery of the pharmaceutical for the level 4 & 5 health facilities in the year 2014 was 11 days which is against the set standards of operations of delivery set time of maximum of 3 days, while in the year 2015 was at 10 days, the year 2016 was at 7 days and in 2017 and 2018 was at 6 days and 1-3 days respectively this was an indication that the contracted transporters had right operating systems, truck systems and facilities to delivery with the stipulated time.

This implementation of strategic distribution sourcing strategies contributed to performance of the level 4 & 5 hospitals on quality management practices through ensuring that quality products are delivered and in the right conditions and right place, as indicated in the table 4.15 Quality (customer complaints) was a great challenges in the year 2014 with at least 20 complaints in every delivery made, in the year 2015 was at 14 complaints, in 2016 was 14, 2017 was at 9 and finally the third quarter of 2018 was 3 complaints per every delivery. This was an implication that delivery was carried using the rights trucks for the cold chain distribution and trucks that met required standard which was ensured through a distribution planning and a performance based distribution.

Table 6. Performance of Level Four and Five Hospitals

Indicators	Performance				
Year	2014	2015	2016	2017	2018
Cost reduction (ksh)	0.07 m	0.15 m	0.156 m	0.9 m	1.5 m
Lead Time (days)	11 days	10 days	7 days	6 days	1-3 days
Quality (customer complains)	20	18	14	9	3

Inferential Analysis

Regression analysis

Regression analysis was done to measure the strength of relationship between the three studied independent variables and the dependent variable the results presented in table 4.14 present the model summary in explaining the study phenomena. The coefficient of determination also known as the R square shows that Delivery Scheduling, Value Added Services and Customer requirement has a 69.1 % variation on the dependent variable that is Performance of level four and five hospitals. This results further means that the model applied to link the relationship of the variables was satisfactory. The results indicate that, the higher the R squared, the better the model fits the data being presented. In this case 69.1% of R squared was satisfactory.

Analysis of Variance

ANOVA statistics of the processed data at 5% level of significance shows that the value of calculated F is 52.854and the value of F critical at 5% level is 2.17 since F calculated is greater than the F critical (52.854>2.17), this shows that the overall model was significant in explaining the variation in the dependent variable.

Beta Coefficients

The established regression equation was:

Y= 1.239 + 0.732X1+0.208X2+ 0.156X3+ .

From the findings in the regression analysis, if the factors (Delivery Scheduling, Value Added Services, Customer requirement,) were held constant, performance of level four and five hospitals in the level 4&5 hospitals in the selected counties would be at 1.239.

Regression results revealed that Delivery Scheduling has significance influence in performance of level four and five hospitals in Kenya as indicated by $\beta_1=0.732$, $p=0.000<0.05$, t= 3.711. The implication is that as increase in Delivery Scheduling lead to increase in level four and five hospitals performance by $\beta_1=0.732$This implied that an increase in Delivery Scheduling identification would lead increase in level four and five hospitals performance

Regression results revealed that Value Added Services has significance influence in in performance of level four and five hospitals in Kenya as indicated by $\beta_2=0.208$, $p=0.001<0.05$, t= 1.331. The implication is that as increase in Value Added Services lead to increase in level four and five hospitals performance by $\beta_2=0.208$ This implied that an increase in Value Added Services would lead increase in level four and five hospitals performance.

Regression results revealed that Customer requirement has significance influence in productivity in performance of level four and five hospitals in Kenya as indicated by $\beta_3=0.156$, $p=0.002<0.05$, t= 1.026. The implication is that as increase in Distribution channel management lead to increase in level four and five hospitals performance by $\beta_{3=}0.156$. This implied that an increase in Customer requirement identification would lead increase in level four and five hospitals performance.

Table 7. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.831a	.691	.678	.549

a. Dependent Variable: Performance of level four and five hospitals
b. Predictors: (Constant), Predictors: (Constant), Delivery Scheduling, Value Added Services, Customer requirement

Table 8. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.853	3	15.951	52.854	.000[b]
	Residual	21.427	71	.302		
	Total	69.280	74			

a. Dependent Variable: Performance of Level Four and Five Hospitals In Kenya
b. Predictors: (Constant), Delivery Scheduling, Value Added Services, Customer requirement,

Table 9. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.239	.306		4.049	.000
	Delivery Scheduling	.732	.197	.786	3.711	.000
	Value Added Services	.208	.156	.253	1.331	.001
	Customer requirement	.156	.189	.200	1.026	.002

The optimal model is given as follows;

$Y = 1.239 + 0.732X_1 + 0.208X_2 + 0.156X_3 + \varepsilon$

Where:-

Y= Performance of level four and five hospitals

β_0=constant

X_1= Delivery Scheduling

X_2= Value Added Services

X_3= Customer requirement

ε=Error Term

4. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Introduction

This chapter describes the summary of the study, conclusions and recommendations of the study. The main purpose of the study was to determine the influence of outsourced distribution services on performance of level four and five hospitals in Kenya. The study also determined the influence of independent variables.

Summary of the Finding

Third Party Logistics Management

The study also established that Reporting 3PL warehouse management systems (WMS) give county level four and five hospitals in Kenya full visibility into stock levels, including what stock is moving off the shelf, how long things are stored for, and much more. This visibility is very reassuring for product managers who want to see where their products are at all times. Order management and processing fulfillment is a key task in 3PL. Getting goods to the customer's door or dock on time is crucial for customer service, and 3PLs will enable this. Using technologies that interface with health facility distribution scheduling many of the processes are automated and all become completely traceable. Freight and distribution in with the services above increases the overall value you get from 3PL. By bundling freight in with other services, it achieves greater economies of scale and removes the burden of managing these tasks from health facilities.

Conclusion

The study concludes that the 3PL managing third party logistics (3PL) providers is vital to keeping the overall supply chain running effectively. Making the most of these relationships can be the difference between marginal performance of level four and five hospitals and true competitive advantage. Outsourcing to a 3PL provides flexibility and scale that enable the company to meet varying levels of customer demand. The capital and one-time expense of implementing a company-run distribution operation taking space, hiring staff, installing equipment, implementing software are resources and energy usually better used on growing the top line. A 3PL offer economies of scale that minimize upfront capital, fixed cost and much of the management burden of logistics

Recommendations

The study recommends that county hospitals who use 3PLs report that they experience improvements in order fill rate and order accuracy. This is a win-win for the retail and the customer. Time savings equate to cost savings at the retailer's end. While increased accuracy equates to distribution performance with less taken to carry out delivery in various destinations.

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