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**ROLE OF THIRD PARTY LOGISTICS SERVICE PROVIDERS ON SUPPLY CHAIN PERFORMANCE IN THE DISTRIBUTION SECTOR IN KENYA: A CASE OF DHL KENYA LIMITED**

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## **ABSTRACT**

The Supply Chain is a structured manufacturing process wherein raw materials are transformed into finished goods, then delivered to end customers. As a consequence of technology developments and globalization, exporters and importers are increasingly outsourcing their logistics activities to Third Party Logistics (3PL) providers whose activities efficiency and effectiveness are responsible for the success of their businesses. The use of 3PL providers can yield important benefits such as reduced logistics costs, improved order fill rates, and shortened average order-cycle lengths and cash-to-cash cycles. The general objective of the study is the role of 3PL service providers on supply chain performance in the distribution sector in Kenya; a case of DHL Kenya limited. The specific Objectives are, to determine the influence of customer service integration on the supply chain performance, to assess how information technology affects supply chain performance, to find out the influence of strategic human resourcing on the supply chain performance and to establish how strategic alliances affect supply chain performance in DHL Kenya. The study adopted a descriptive survey design. The target population of this study is (290) employees of DHL Kenya in Nairobi. The study targeted at respondents in the following departments; customer service, corporate affairs, finance department, business development, operations and credit and risk department. The sample size was 87 respondents and the stratified random sampling was used. Data was collected using structured questionnaire to ensure consistency. The response rate was 80.45%. The four independent variables that were studied, explain 84.4% of role of 3PL service providers on supply chain performance in the distribution sector in Kenya as represented by adjusted R square. The study concluded that information technology influences the supply chain performance in the distribution sector in Kenya most followed by strategic human resourcing, strategic alliance and finally customer service integration. From the summary and conclusions, the study recommends that distribution organisation should have very clear and simple customer complain and communication channels. The study also recommends that the distribution organization should invest on information technology like ERP which will help them coordinate the distribution activities. The study further recommends that the companies should focusing their efforts on their core competencies and outsourcing their logistics functions to one or more logistics providers.

**Keywords:** *Supply Chain, manufacturing, Third Party Logistics, globalization, exporters and importers and supply chain performance.*

### **Background of the Study**

The globalization, harder competition and the quick, dynamic and complex market of today (Brewer 2013) are making it very hard to act as a singleplayer and as an independent business entity. According to Tsay (2014) because no organization can do everything itself, each one must choose a division of labour in every endeavour, defining its own roles and ceding any remaining duties to other parties. As defined by Rushton and Walker, (2007) outsourcing is the strategic use of external specialized service providers to execute and manage activities or functions that are normally seen as non-core to the business and also a third party logistics service provider is commonly used as the term to describe an external provider who manages outsourced activities on behalf of the shippers or customers whose business processes they support. Logistics outsourcing practices include: outbound transportation, warehousing, inbound transportation, freight bill auditing/payment, customs brokerage, freight forwarding and customs clearance.

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

Supply chain management has played an significant role in the global market and has attracted the attention of numerous academicians. As reported, a Supply Chain is a structured manufacturing process wherein raw materials are transformed into finished goods, then delivered to end customers. The role of logistics in supply chain management provides plenty of significant improvements in industrial development. Third party logistics assists to supply right product to right consumers' in right quantity. (Min et. Al 2009). It therefore follows that rapid changes in the business environment require senior management to adopt strategies that focus on both current success and to invest in those activities that will promote a competitive advantage for future success. One widely recommended technique for improving one's competitive position is "outsourcing" (Kumar 2007). Many managers view outsourcing as the only way to keep a business competitive into the twenty-first century.

Effective transport services have become a critical issue for companies' performance. The highly competitive environment along with customers' demands for tailored products and services has forced companies to continuously evaluate, improve and reengineer their transport operations. These operations have a noticeable contribution in companies' efforts to meet customers' expectations. Their outcomes, such as place convenience, waiting time convenience, delivery time convenience, and after sales convenience, are easily visible and assessable by the final customer and consequently delineating its purchasing behavior. The close relationship between transportation and customer service dictate that companies handle their transport services function prudently so as to receive its full potential benefits (Cheng, 2009).

Companies outsource the services of 3PL for many reasons including; to gain access best practices, to improve service quality, to control logistics cost, to increase speed, to properly manage its resources, to spread its risks and to focus on issues that are very much crucial to their existence and future growth. Third Party Logistics (3PL) has many interpretations and definitions. Lieb, Millen & Wassenhove (1993), define 3PL provider as the external company to carry out the logistics functions that have conventionally been executed within an organization. A Third Party is neither the shipper nor the customer in the supply chain. According to definition by the Council of Supply Chain Management (CSCM, 2013; Forrest, Will, Roberts, Ashwini, & Wininger, 2008), First Party Logistics (1PL) concerns the beneficial cargo owners which can be the shipper or the consignee and they dictate the origin and the destination of the cargo. The Second Party Logistics (2PL) concerns the carriers that provide transport services over a specific segment of a transport chain and could involve a maritime shipping company, a rail operator or a trucking company that are hired to haul cargo from an origin to particular destination. Third Party Logistics (3PL) providers are Freight

forwarders, Courier companies and Other companies integrating and offering subcontracted logistics and transportation services (CSCMP, 2013).

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

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

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

### **Statement of the Problem**

According to Alan, Phil and Peter (2006) logistics services contribute over 50 per cent of companies operating cost. Outsourcing of logistics services enables the creation of strategic

and operational value and 64% of shippers are increasingly using 3PLs (Lucie & Hudziak, 2012). A study by Langley (2015) on the state of logistics outsourcing revealed that the total logistics cost of the companies reduced from 44% to 36% as a result of outsourcing logistics services. In the competitive and dynamic environment, an array of companies are looking for ways of enhancing efficiency and productivity, reducing cost, ensuring timely delivery, improving service quality and risk assessment which remains a challenge to companies in maintaining their competitive edge (Vishal et al., 2013; Ngonela et al., 2014 & SoonHu, 2010).

Study by Bolumole (2003) on the supply chain role of third-party logistics providers, third party logistical obstacles in manufacturing industries in India revealed that, third party logistics provider's play a vital role in cost reduction, productivity, profits as well as the improvement of the service quality of their customers and thus become important part of logistics performance. Therefore, this study will seek to establish whether the findings and conclusions of this study carried out in India may be generalized in Kenya by conducting a study on the role of third party logistics service providers on supply chain performance in the distribution sector in Kenya: a case study of DHL Kenya limited.

According to the study by Mwaniki,(2014), when DHL started its operations in Kenya in 1995 with only the Unilever Kenya business, the entire transport service was outsourced to transporters who previously worked for Unilever. At that particular time it did not own any fleet owing to the fact it was the first time it was setting foot in Africa and the large capital base required. It has continued to outsource over the years amid a myriad of problems. The transporters sometimes refuse to give their trucks unless rates are increased citing increased costs. Rates can only be reviewed upon agreement with the client and this depends on a certain formula agreed at the inception of the contract. It factors changes in fuel price, inflation and forex. Sometimes the client takes time to implement the changes and this affects the DHL-transporters relationship and greater still their performance in service delivery. Some transporters withhold their trucks from routes deemed unprofitable opting for the lucrative ones. This affects service delivery. Pilferage is also another problem encountered when truck drivers collude with highway thieves to steal client goods. If this continues for a while the client might terminate the contract citing high losses. Insurance also take time to compensate the losses. Following these problems encountered with outsourcing for third party logistics providers, the multi zillion question is whether it is still beneficial?

## **Literature Review**

Lalonde and Zinszer (2010) suggested that the customer service could be examined under three headings: pre-transaction elements, transaction elements and post-transaction elements. The pre-transaction elements refer to organization policy and program. The statement of customer service policy must be written clearly. The system's flexibility, accessibility and organization culture are also very important. The transaction elements are physical distribution functions that customer service involved during the delivery. For example, the order cycle time, inventory availability, order fill rate and order status information. The post-transaction elements of customer service are indicated by the after-sale supportive services. The elements include product warranty, product repair and customer claims, etc. The companies need to provide the same level of service during the different phase to maintain customer satisfaction. Customer service is an essential aspect during the logistics process. Poor customer service leads to increase in costs; lost business and bad reputation.

Customers are the most important factor in the business environment. All of the products and services are provided to satisfy the customers needs. Therefore, providing a high level of customer service is quite important. Customer service is an important factor influencing companies success (Fuller *et al.*, 2013), and 3PL companies have no exception. Customer service can be considered as the relationship between companies and customers during the delivery of products and services. This relationship is not only including the purchasing, shipping and receiving; but also include the after sale service and the whole flow of information during the delivery.

A high and deliberate level of customer service can ensure customers go a long way with companies (Bhatnagar *et al.*, 2009). Then the 3PL companies can gain long term development, which is equal to success. According to a research by Rajesh *et al* (2011), it is found that 3PL companies depend on their professional logistics service to provide values to their clients. As aforementioned, one of the the reasons 3PL companies exist in the market is because they can create cost or value advantages to clients. When they can provide competitive cost or value advantages to clients, they can have a competitive position in the marketplace. For instance, through warehouse management, 3PL companies can help their clients reduce the cost. Through cooperation with their clients, they can help these clients achieve strategic objectives and improve their clients' organizational performance. Kumar (2007) also agrees with the importance of customer service to 3PL companies performance. He cites that the competition experienced in most firms in the service industry can partly be addressed by 3PL companies that are customer oriented. Hence, in order to increase customer satisfaction, a certain level of customer service should be considered. Gupta *et al* (2013) are also in tandem with Kumar's thought on the role of customer service to the success of 3PL companies. However, they argue that the effectiveness of customer service is strongly determined by the information technology and systems used by the 3PL companies.

Gupta *et al* (2013) claim 3PL companies can provide better logistics solutions to their clients because they have established a strong and integrated supply chain management system. The reduction of cost and value addition provided to clients are as well achieved with the incessant use information technology.

In the advent of advanced technological systems, most 3PL companies are able to provide distinguished services to businesses. Therefore, from the viewpoint of Gupta *et al* (2013), information technology is more important to the performance of a 3PL company than customer service because it is the foundation of high quality of customer service. In the beginning of the 21st century, the logistics industry has seen a clear reliance on information technology. The development of the 3PL is based on logistics low operation cost and high efficiency.

By using advanced information technology systems, not only expands the logistics enterprise profit space, but also make the 3PL have more advantages in the logistics competition, thereby promoting the development of the 3PL industry is very important (Alshawi, 2001). Accelerated technological innovation and standardization, the introduction of reliable information networks are the guarantee for improved efficiency of logistics services (Bourlakis and Bourlakis, 2006).

3PL information management strategy not only optimizes the enterprise internal resource allocation, but also on the network and users, for manufacturers and suppliers to achieve resource sharing, information sharing, real-time tracking, control and management efficiency during the whole logistics activities (Lai *et al.*, 2006). Gupta *et al* (2013) claims that

information technology is the foundation of customer service, and that the above observations prove the significant role of integrated information systems to the success of 3PL companies, but there are different viewpoints.

Laarhoen et al. (2000) have analyzed the performance of 3PL companies from the perspective of their clients. From the clients who evaluate the 3PL companies as high performing, it is found that the 3PL companies would arrange managers to monitor the day-to-day activities for their clients. On the one hand, this proves the importance of service; as yet, it is proved that managers are important to the success of 3PL companies. These studies prove that there is close relationship between human resource, the use of information technology and customer service. The efforts and performance of human resource of 3PL companies can determine their development and performance.

According to Cheng et al. (2009), there are three factors which significantly influence the performance of 3PL companies. They are leadership, human resource management, and degree of information. The first and second factors are related to the management on human resource. Leadership means the leaders influence and motivation on employees, and human resource management is motivation, evaluation and reward activities conducted by the companies. The degree of information means the degree to which companies provide timely, reliable and accurate information about their logistics service to the clients. Although Chang's research is focused on the human resource, it is worth noting that his findings confirmed that customer service is also one important factor. From the perspective of human resource, it is because logistics services must be offered by a dedicated pool of employees. From receiving the products from clients and delivering the products to clients, employees are participating in the whole process. Therefore, 3PL companies cannot completely depend on information technologies and systems. The technologies and systems are the tools, and clients interact with employees. This makes human resource an important factor to the performance of 3PL companies.

The above factors have received concerted agreement agreed by a number of scholars. In addition to these factors, some scholars pay attention to some specific factors, such as strategic alliances. It is found that in some countries where the competition is fierce, 3PL companies have to establish strategic alliances to maintain their competitive position in the marketplace. The 3PL companies need to develop the logistics market, reduce logistics cost and improve logistics efficiency with the principle advantage complementary, interests sharing. These companies would establish a logistics resource league, get together the small and medium size enterprise and collect the scattered logistics resources, and then form a logistics integrated resource advantage. Implementing logistics alliance in a certain geographic area can form a highly efficient operation system. Even better, development of a 3PL alliances union to coordination and guidance the relationship between logistics enterprises can develop 3PL efficient (Goh *et al.*, 2003).

Logistics and supply chain management has continued to become more widely recognized because of its importance to the survival of companies. In recent years, company's performance measurement and metrics have received much attention from researchers and practitioners (Gunasekaran *et al.*, 2013). The role of these measures and metrics in the success of a company cannot be overstated because they affect strategic, tactical and operational planning and control (Gunasekaran *et al.*, 2013). Logistics activities cover the entire supply

chain so they become important in improving company's overall performance (Zaryab & Shafaq, 2014).

The efficient flow of international trade relies on a range of skilled service providers working together effectively, including shipping lines, port terminal operators, customs officials, operators of off-dock container yards, land transport agents and clearing and forwarding (C&F) agents (Mathenge *et al.*, 2011). Outsourcing logistics functions has a direct bearing on the company's ability to meet its commitments to customers and shareholders (Ngonelam *et al.*, 2014). Cost and service represent the most important criteria in logistics outsourcing decisions (SoonHu, 2010). With increased competition and shrinking market, most businesses are very keen on cost and finding the shortest route to the market.

Performance measurement systems appear to be instrumental for assessing the extent of 3PL provider success and identifying corrective action in case of service failures (van Hoek, 2010; Wilding & Juriado, 2014). The establishment and continuous monitoring of key performance indicators (KPIs) related to logistics services allows users to compare achieved with expected service levels. Examples of such measures include delivery timeliness and accuracy, order fill rates and inventory turns (Wilding & Juriado, 2014). Performance metrics can also be used by Logistic Service Providers for benchmarking purposes (Stank & Patrick, 2008; Sum & Teo, 2009).

Additional practices for management and control of 3PL relations include carrying out customer satisfaction surveys, gaining access to Logistic Service Providers' information systems, jointly planning and implementing performance improvement processes and organizing 3PL forums where the client company shares information with regard to logistics strategy objectives (Boyson *et al.*, 2009; Wilding & Juriado, 2014). The role of IT systems as safeguarding mechanisms in the shipper-3PL provider relationship has been stressed by Bourlakis and Bourlakis (2015).

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

Nemoto and Tezuka (2002) in their study on advantage of third party logistics in supply chain management revealed that joint usage of SCM and 3PL should be promoted because of their positive interactive effects. When firms intend to introduce SCM, it would be beneficial to outsource logistics activities and utilize a 3PL provider. However, the study could not fully clarify the relationship between strategic human resourcing, a clear cut customer service acumen and strategic alliances.

Lucie and Hudziak (2012) in their study on addressing quality problems in 3PL processes revealed that as a consequence of technology developments and globalization, shippers are increasingly outsourcing their logistics activities to third party logistics providers whose

activities efficiency and effectiveness are responsible for the success of shippers' business. At the same time, shippers decrease the number of 3PLs they use making the competition tougher for logistics providers. To enable 3PLs to stay competitive, the study revealed that 3PLs can improve their customers' satisfaction by studying their operational processes from a Lean perspective.

Customer Service integration: 3PL's prime objective is to deliver the products Full and On Time (FOT) and today's customer require that all the products should be delivered on time. When it comes to supplies of raw material for plant, the production house also require every material on time because they can't bear a delay of even single minute to optimize its production level up to maximum level. Because if the production unit will deliver the finished goods on time that will be supplied to warehouses on time by third party logistics service providers, then equally it will be supplied to end customers to achieve customer satisfaction. If customer satisfaction would not be there obviously company will have to bear lose in sales. It will also affect some other factors like goodwill of the company etc. and then this may divert their attention and from other equally important issues like marketing campaigns, costing and budgeting processes, production units and other important company operations which can't be outsourced or can't be given to third parties (Sink and Langley, 2007).

Today's marketplace is shifting from individual company performance to the entire chain's ability to effectively and efficiently meet the end-customer needs through product availability, responsive and on-time delivery. In recent years, organizational performance measurement and metrics have received much attention from researchers and practitioners (Gunasekaran, Patel, & Ronald, 2003). Logistics performance crosses both functional lines and company boundaries. Logistics activities cover the entire supply chain so they become important in improving supply chain's overall performance (Zaryab & Shafaq, 2014).

The efficient flow of international trade relies on a range of skilled service providers working together effectively, including shipping lines, port terminal operators, customs officials, operators of off-dock container yards, land transport agents and clearing and forwarding (C&F) agents (Mathenge *et al.*, 2011). Logistics management has continued to become more widely recognized because of its importance to the survival of the business. Outsourcing logistics functions has a direct bearing on the company's ability to meet its commitments to customers and shareholders (Ngonela *et al.*, 2014). Cost and service represent the most important criteria in logistics outsourcing decisions (SoonHu, 2010). With increased competition and shrinking market, most businesses are very keen on cost reduction and finding the shortest route to the market.

It is often reported that 3PLs' customers expect that logistics outsourced activities result in reduced logistics costs, reduced cycle times and more efficient handling of exceptions (Knemeyer & Murphy, 2004; Lucie & Hudziak, 2012). In the performance of logistics, ranking of 3PL selection criteria can be based on price, reliability, service quality, on-time performance, cost reduction, flexibility and innovation, good communication, management quality, location, customize service, speed of service, order cycle time, easy to work with, customer support, vendor reputation, technical competence, special expertise (SoonHu, 2010; Liu *et al.*, 2010; Tian, Ellinger & Chen, 2010). Logistics outsourcing has become a rapidly expanding source of competitive advantage as companies are realizing that they can no longer compete as stand-alone entities, and are better off as part of an interlinked value chain network. Third-party logistics providers have the expertise and resources to perform these

activities more efficiently and effectively than an in-house team (Solakivi *et al.*, 2011). Recent data show that about 80% of the Fortune 500 companies surveyed use 3PL services, which comprise a steadily increasing percentage of their logistics operating budget (SoonHu, 2010; Mathenge *et al.*, 2011). Furthermore, synchronization and coordination of complex logistics activities across multiple facilities and countries requires the commitment of substantial resources.

**Information Technology:** Lucie and Hudziak (2012) in their study on addressing quality problems in 3PL processes, it was revealed that as a consequence of technology developments and globalization, shippers are increasingly outsourcing their logistics activities to third party logistics providers whose activities efficiency and effectiveness are responsible for the success of shippers' business. At the same time, shippers decrease the number of 3PLs they use making the competition tougher for logistics providers. To enable 3PLs to stay competitive, the study revealed that 3PLs can improve their customers' satisfaction by studying their operational processes.

**Strategic Human Resourcing:** Innovative and dynamic employee development and hiring strategies will play a critical role in most organizations' response to the anticipated labor shortage. Built-in succession programs and training programs will help employers develop their existing talent pool and cross training will take on greater importance. While the labor shortage spans the whole supply chain, shortages among warehouse workers and truck drivers are expected to be the worst. To help bridge the gap, the industry is already recruiting within several existing, under-represented labor pools, including women and military veterans. Automation, both within the warehouse and on the road, could help lessen the impact of a workforce shortage, and the industry has looked at a number of technologies, including driverless trucks, drones and crowd-sourced package deliveries, as options.

A study done by Bernades (2009) reviewing the flexibility, agility and responsiveness in the operations management literature observed that the logistics industry is facing an unprecedented labor shortage, which will bring both challenges and opportunities. To meet demand, 3PLs will need to leverage their employees in a new way, providing added value and giving them a competitive advantage. With 79% of 3PLs in the study reporting that they feel unprepared for the labor shortage's impact on their supply chain, providers will need to re-think their strategy for attracting and retaining employees.

Strategic alliances:

### **Research Methodology**

The study adopted a descriptive survey design. The target population of this study was (290) employees of DHL Kenya in Nairobi. The study targeted at respondents in the following departments; customer service, corporate affairs, finance department, business development, operations and credit and risk department for they have information on 3PL service provision on supply chain performance at DHL Kenya limited. The study proposed a sample size of thirty percent as being reliable in a case where the population is not highly heterogeneous hence this study took this as the percentage to use for employees. This gave a sample size of fifty eight (87) respondents out of (290).

A questionnaire was developed to capture the various variables under study, and for the independent variables. The data collected was analysed using both qualitative and quantitative analysis techniques. Qualitative data was analysed by arranging responses according to the

research questions and objectives. Descriptive statistics including percentages and frequency counts was used to analyse quantitative data obtained from the respondents.

The study also used descriptive statistics for data analysis because the study involves statistical analysis of relationship between variables. The Statistical Package for Social Sciences (SPSS) was used for statistical analysis. The results of data analysis were represented in frequency tables and charts. Thereafter, conclusions and recommendations were drawn.

## **Data Analysis, Interpretation and Presentation**

### **Regression Analysis**

The researcher conducted a multiple linear regression analysis so as to determine the relationship between the supply chain performance and the four independent variables. The regression model was;  $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$  Whereby:  $\beta_0$  is the regression intercept;  $\beta_1$ - $\beta_4$  is the regression coefficients; Y is the dependent variable (Supply chain performance);  $X_1$  is the customer service integration ;  $X_2$  is information technology;  $X_3$  is strategic human resourcing and  $X_4$  is strategic alliances. The researcher applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study.

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable. The four independent variables that were studied, explain 84.4% of role of 3PL service providers on supply chain performance in the distribution sector in Kenya as represented by adjusted R square. This therefore means that other variables not studied in this research contribute 15.6% of the role of 3PL service providers on supply chain performance in the distribution sector in Kenya. Therefore, further research should be conducted to investigate the other variables and factors (15.6%) that influence supply chain performance in the distribution sector in Kenya.

## Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.967 <sup>a</sup>	.925	.844	.5699

a. Predictors: (constant), Customer service integration ; Information technology; Strategic human resourcing and strategic alliances .

### ANOVA

Table 4.8, shows the regression and residual (Error) Sum of squares. The variance of the residuals (or errors) is the value of the mean square which is 803.196. As can be observed in table 4.8, the predictors X1-X4 represent the independent variables, which are the factors enhancing supply chain performance in the distribution sector in Kenya. Table 4.8 also provides the data to compute R<sup>2</sup>. This is sum of squares-regression divided by sum of squares total R squared.  $SS\text{-regression}/SS\text{-total}$   $3212.784/4=803.196$ . Table 4.8 reports that the summary of ANOVA and F-statistic which reveals the value of F (1.204) is significant at 0.05 confidence level. The value of F is large enough to conclude that the set independent variables X1-X4 are the factors enhancing supply chain performance in the distribution sector in Kenya.

### ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3212.784	4	803.196	1.204	0.05
Residual	314.535	66	2.329		
Total	3527.317	70			

### Regression Coefficient

The possible value of Y when all independent variables are equal to zero is 5.063. The data findings analyzed also showed that taking all other independent variables at zero, a unit increase in information technology will lead to a 0.354 increase in supply chain performance in the distribution sector in Kenya; this means there is a significant relationship between information technology and supply chain performance in the distribution sector in Kenya. The *P*-value was 0.040 and thus the relationship was significant.

A unit increase in strategic human resourcing will lead to a 0.348 increase in supply chain performance in the distribution sector in Kenya; this means that there is a significant relationship between strategic human resourcing and supply chain performance in the distribution sector in Kenya. The *P*-value was 0.030 and thus the relationship was significant. A unit increase on strategic alliance will lead to a 0.338 increase in supply chain performance

in the distribution sector in Kenya; this means there is a significant relationship between strategic alliance and supply chain performance in the distribution sector in Kenya. The *P*-value was 0.020 and thus the relationship was significant. Lastly, a unit increase in customer service integration will lead to a 0.312 increase in supply chain performance in the distribution sector in Kenya; this means that there is a significant relationship between customer service integration and supply chain performance. The *P*-value was 0.010 and thus the relationship was significant.

This means that information technology influences the supply chain performance in the distribution sector in Kenya most followed by strategic human resourcing, strategic alliance and finally customer service integration. As per the SPSS generated coefficient table 4.8, the equation ( $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$ ) becomes:  $Y = 0.312X_1 + 0.354X_2 + 0.348 X_3 + 0.338 X_4 + 5.063$  *Y* is the dependent variable (supply chain performance); *X*<sub>1</sub> is the customer service integration; *X*<sub>2</sub> is information technology; *X*<sub>3</sub> is strategic human resourcing and *X*<sub>4</sub> is strategic alliances.

Regression Coefficient

Model	Unstandardized		Standardized T	Sig.	
	Coefficients				
	B	Std. Error	Beta		
(Constant)	5.063	3.061	1.652	.104	
Customer service integration	0.312	0.073	0.204	2.221	0.010
Information technology	0.354	0.079	0.623	5.344	0.040
Strategic human resourcing	0.348	0.058	0.375	3.063	0.030
Strategic alliances	0.338	0.039	0.472	5.328	0.020

a. Dependent Variable: supply chain performance

**Summary of Findings**

Several empirical studies have investigated the effect of customer service integration, information technology, strategic human resourcing and supply chain performance especially in the distribution sector. Many of these studies, however, are concentrated in developed countries or in countries with jurisdictions not similar to Kenya. Few have attempted to demonstrate the effects of these factors in the private sector. This study sought to determine the role of 3PL service providers on supply chain performance in the distribution sector in Kenya; a case of DHL Kenya limited by looking at customer service integration, information technology, strategic human resourcing and strategic alliance on supply chain performance.

The summary of study findings are indicated below according to the objectives and research questions:

The first objective of the study was to establish the influence of customer service integration on the supply chain performance at DHL Kenya. According to the findings, study indicate that the respondents agreed with great extent 48.6 %, that having efficient complaints handling procedures will affects supply chain performance. Again the respondents agreed with moderate extent with the statement at 28.6% while 22.8% of the respondents did not agree at all with the statement. Respondents agreed with 62.9% that Constant and clear communication to customers will affects supply chain performance at DHL Kenya LTD, 22.8% of the respondents agreed with moderate extent with the statement that Constant and clear communication to customers will affects supply chain performance at DHL Kenya LTD.

The respondents agreed with great extent of 54.4% that the deliberate aim at customer satisfaction in DHL Kenya LTD is directly proportional to its supply chain performance, 34.6% of the respondents agreed with moderate extent with the statement while 20% and of the respondents did not agree at all with the statement. The respondents agreed with great extent of 60% that Customer experience will affect supply chain performance at DHL Kenya Ltd, 17.1% of the respondents agreed with moderate extent with the statement while 22.8% and of the respondents did not agree at all with the statement. The respondents agreed with great extent of 68.6% that keeping customer time constraints and pacing needs front and center is key to supply chain performance at DHL Kenya Ltd, 17.1% of the respondents agreed with moderate extent with the statement while 14.3% and of the respondents did not agree at all with the statement.

The second objective of the study was to assessing how information technology affects supply chain performance at DHL Kenya. The studies revealed that information technology improve supply chain performance. According to the findings, the respondents strongly agreed with a mean of 4.21 and a standard deviation of 0.65 that the adoption of on-transit tracking is pivotal in Supply chain performance. Again the respondents strongly agreed with a mean of 4.63 and a standard deviation of 0.52 that real time response to customers has an effect on supply chain performance at DHL.

The respondents further agreed with a mean of 4.35 and a standard deviation of 0.61 that DHL have an improved billing systems hence improving supply chain performance. The respondents strongly agreed with a mean of 4.01 and a standard deviation of 0.58 that by reducing paper work on the parties of the chain, it will affect supply chain performance. The respondents further agreed with a mean of 4.45 and a standard deviation of 0.68 that ccustomers experience is improved by the adoption of information technology, thus affecting performance.

The third objective of the study was to finding out the influence of strategic human resourcing on the supply chain performance at DHL Kenya. The finding indicated that strategic human resourcing contribute positively on organisation supply chain performance. According to the study, the respondents agreed with very large extent of 82.85% that the competent pool of employees will affect the supply chain performance of the an enterprise.

Again the respondents agreed with very large extent of 80% that an experienced team in enhancing customer experience affect supply chain performance, 57.14% of the respondents agree with very large extent that succession planning affects supply chain performance at DHL, 85.71% of the respondents have agreed that Succession planning have affects supply

chain performance at DHL while 68.57% of the respondents have agreed with large extent that high level of team work and team culture affect supply chain performance

The fourth objective was to establishing how strategic alliances affect supply chain performance in DHL Kenya. According to the findings the study agrees that strategic alliance enhance organisation supply chain performance. According to the findings, the respondents agreed with very large extent of 57.14% that the a well-executed joint ventures have an effect on supply chain performance for their enterprise. Again the respondents agreed with very large extent of 85.71 % that the adoption of foreign collaborations has an effect on supply chain performance.

Again the respondents agreed with very large extent of 64.29% that the shared risks and rewards in strategic alliances affects supply chain performance, 68.57% of the respondents agree with very large extent that market access is eased at DHL hence improving on supply chain performance, while 74.29% of the respondents have agreed that Strategic alliances have reduced operational costs hence improving supply chain performance.

### **Conclusion**

From the findings the study concludes that customer service integration affects supply chain management in a significant way. The study have also indicate that having efficient complaints handling procedures will affects supply chain performance. Respondents have also agreed that Constant and clear communication to customers will affects supply chain performance at DHL Kenya LTD and Customer experience will affect supply chain performance at DHL Kenya Ltd. Finally, on customer service integration, keeping customer time constraints and pacing needs front and center is key to supply chain performance at DHL Kenya Ltd.

On information technology, the study concludes that the adoption of on-transit tracking is pivotal in Supply chain performance and real time response to customers' needs has an effect on supply chain performance at DHL. Further the study concludes that DHL have an improved billing systems and by reducing paper work on the parties of the chain, it will affect supply chain performance. Finally on information technology, the customers experience is improved by the adoption of information technology, thus affecting performance.

On strategic human resource, the study concludes that having competent pool of employees will affect the supply chain performance of the an enterprise. Again having an experienced team will enhance customer experience, affecting supply chain performance, and finally high level of team work and team culture affects supply chain performance

According to the findings, the on th strategic alliance, the study concludes that a well-executed joint ventures have an effect on supply chain performance for any organization. Again the adoption of foreign collaborations has an effect on supply chain performance. Further shared risks and rewards in strategic alliances will also affects supply chain performance and finally the strategic alliances have reduced operational costs hence improving supply chain performance.

### **Recommendations**

From the summary and conclusions, the study recommends that distribution organisation should have very clear and simple customer complain and communication channels. The study recommends that the distribution organisation should shifting from individual company

performance to the entire chain's ability to effectively and efficiently meet the end-customer needs through product availability, responsive and on-time delivery through involvement of the supply chain players.

The study also recommends that the distribution organisation should invest on information technology like ERP which will help them coordinate the distribution activities. Consequence of technology developments is globalization hence increasing efficiency and effectiveness of third party logistics providers. Again Information technology will help on transit, improved billing systems hence reducing paper work on supply chain activities.

The study also recommends that the distribution organisation should have programs for dynamic employee development, built-in succession programs and training programs will help employers develop their existing talent pool and cross training will take on greater importance.

The study further recommends that the companies should focusing their efforts on their core competencies and outsourcing their logistics functions to one or more logistics providers. The study further recommends that organisation should increasing focus of business expansion into the global market.

This study is a milestone for future research in this area, particularly in Kenya. The findings emphasize on the on role of 3PL service providers on supply chain performance in the distribution sector in Kenya; a case of DHL Kenya limited is beyond the scope of the four variables identified in the study. Therefore, similar study should be conducted using different variables to establish which other variables on the role of 3PL service providers on supply chain performance in the distribution sector.

The study was confined to a literature review that only customer service, information technology, strategic human resourcing, strategic alliances and the theories that support these four variables. Thus, empirical work that actually demonstrates the whole of role of 3PL service providers on supply chain performance in the distribution sector in Kenya is beyond the scope of the four variables identified in the study. Therefore, similar study should be conducted using different variables to establish which other variables affects the supply chain performance in the distribution sector in Kenya.

Similarly, the data was collected from a single sector of distribution sector in Kenya. There are various sectors of distribution sector in Kenya such as building, construction and mining; chemical and allied; energy, electrical and electronics; leather and footwear; metal and allied; motor vehicle and accessories; paper and board; pharmaceutical and medical equipment; plastic and rubber; textiles and apparels; timber, wood and furniture; service and consultancy.

This study recommends a similar research to be conducted from multiple informants groups of distribution sector to come up with a variety of outcomes. Likewise, the study adopted cross-sectional research design which was limited to point-in-time assessment. Therefore, future research can be conducted using longitudinal research so as to identify factors which contribute to the performance of distribution sector in Kenya with regard to outsourcing of 3PL providers.

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