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Influence of Information Technology Systems on Performance of Courier Service Providers in Kisumu City, Kenya

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Abstract: ***Kenya Logistic performance Index ranking was 74th out of 160 countries and is among the top 10 low income performers. In addition Information transfers rate were limited to only manual processes. This is despite Government involvement in developing IT infrastructure and regulation in the Courier Service Industry. Although there has been, a tremendous growth in the sector according to statistics by the Kenya economic survey (2015. The timely and accurate information has become more critical in the Courier Service Industry. This is more so because implementing Information Technology system is an expensive undertaking. To this end the problem of this study was to examine the contribution of Information technology systems to performance of Courier service providers in Kisumu City Kenya with a view to enhancing their operation in terms of efficiency and effectiveness. The Specific objectives were to determine the influence of Transaction function system, Collaborative system, Decision Support system and to explore the relationship between Information Technology Systems on performance of Courier Service Providers in Kisumu City, Kenya. The Study was guided by Transaction cost Theory. The target population for this study was all the 20 compliant Licensed Courier service providers in Kisumu City out of which10% were delineated for pilot study. All the 18 service providers were included in the study using the census sampling method. Purposive sampling was then used to select 36 respondents of 1.Manager and 1.supervisor. Data collection was done through; semi structured questionnaires for primary Data, Validity of the instrument was determined by the supervisors as logical on the face of it. Cronbach's Alpha statistics was used to measure the internal reliability of the Instrument at α = 78.9%, Data analysis was done using both descriptive statistics and inferential statistics. The descriptive statistics was analyzed using means, standard deviations and percentages, and presented in Tables, Inferential statistics was analyzed using Chi-square(X^2) tested the association between the variables. On objective one, two and three the study found that three variables: transaction, collaborative and decision support system has statistical significant influence on performance. This implies that information technology system adoption can enhance efficiency and effectiveness of Courier Service Providers The findings revealed that there is a positive significant relationship between Information Technology systems and performance. The study concludes that the adoption and integration of Information systems functions both internally and externally, would make Courier service have competitive advantage, efficiency and effectiveness in operations. The study therefore recommends that all courier service providers embrace Information Technology systems. This study is therefore significant and offer guidelines to the sector on how to enhance performance and encourage co-operation with other logistics providers to be more competitive.***

Keywords: Information Technology Systems, Transaction System, Collaborative System, Decision Support System, Logistics Performance

Operational Definition of Terms

Courier Services Providers– An independent logistics service provider that performs any or all the functions of logistics to get clients` product to the market or customers and consumers.

Information – is data that has been processed into a form that is meaningful to the recipient and is of real perceived value in current or prospective decisions.

Logistics – is the core business for Courier service provider which comprises the essential services and tools to ensure shipping, delivery and information sharing to final consumers/customers.

Supply Chain Management – It is a cross functional approach for controlling the physical flow of products and services from the suppliers to the end – users by coordination of the activities of suppliers, manufactures and the end users a role played by Courier services in this Study.

Information Technology systems– is a means to enhance business competitiveness and performance. It is an enabler to create wealth, which depends on the capability of an organization to adopt technology through the change process and deploy it for integrating business process.

1. Introduction

1.1 Background of the Study

Information Technology systems is a means to enhance business competitiveness and performance. It is an enabler to create wealth which depends on the capability of an organization to adapt technology through the change process and deploy it for integrating business process. Technology has become the key factor in defining the competitive advantage in today`s business world, it is playing a major role in the success of supply chain

management by enhancing the overall effectiveness and efficiency of logistics services (Sople, 2010).

Information Technology (IT) has emerged as one of the most popular categories of technological innovation being implemented in the supply chain. The information technology infrastructure is critical factor in the success of any system implementation. This forms the base for data collection, transaction, systems, system access, and communication. Information Technology devices can be categorized as follows: Interface devices: Personal computers, voicemail, Internet, bar-code scanners Personal digital assistants, smart phones, Radio frequency identification (RFID). Communication: internal system are connected to either an internal system e.g. Local Area network (LAN), Intranet or an external network or the internet there major trend is wireless communications and single point of contact for communications. Advance communications capabilities which enable many applications, including, Electronic mail, Electronic Data Interchange (EDI) the ability to electronically exchange Transactions, Geographical Positioning system (GPS), for tracking and tracing products. This needs to be organized in some form of Database, including transaction information status, (Simchi - Levi David, 2003).

Information Technology infrastructure is the shared technology resources that provide the platform for the firm`s specific information systems applications. IT infrastructure includes hardware, software, and services – such as consulting, education, and training that are shared across the firm or across the entire business units. A firm`s IT infrastructure provides the foundation for serving customers, working with vendors, and managing firms business processes. The services a firm is capable of providing to its customers, suppliers, and employees are a direct function of its infrastructure. Ideally this infrastructure should support the firm`s business and information systems strategy. New information technologies have a powerful impact on business and IT strategies as well as the services that can be provided to customers (Laudon 2012).
Logistics information systems are threads that link logistics activities into an integrated process which is built on levels of functionality. Integration which by definition involves ownership is distinguished from pure contractors modes in that it typically facilitate incentives alignment and control, if an innovator owns rather than rent the complimentary asset needed to commercialize, then it is a position to capture spillover benefits stemming from increased demand for the complimentary asset caused by the innovation. According to Shah, (2009) Information systems on its own have limited uses unless it ensured that the right kind of information is accurately captured in a timely manner. Hence for efficiency and effectiveness of IT, it is important to understand the functional of IT at different stages of the supply chain.This research shall consider three levels of Information Technology function that is transaction, Collaborative and decision support within the three levels of managing any Business organization.

According to transactions cost theory, firms and individuals seek to economize on transaction costs, much as they do on production cost. Using marketing is expensive because of costs such as locating and locating distance suppliers, monitoring. IT changes the relative costs of capital and the cost of information, as the cost of information technology decreases, it is substituted for labor. And according to agency theory, the firm is viewed as a nexus of contract among self –interested individuals rather than a unified, profit maximizing entity (Laudon, 2012).

According to Sauvage, (2003).in his study in France, development of technological efforts constitutes a crucial strategic orientation for logistics service providers. The functional status of the provider is evolving from that of an executing subcontractor to that of a joint managing partner in the organization and management of flaws. The logistics service provider is gradually taking the role of key interface in the functioning of information systems for one central reason, it is best positioned to manage contingency in the industrial and distribution markets. Its profit from the uncertainties of its customers. Its development logic is thus opportunistic necessarily founded on logistical information and mastery in of new technologies. These attributes are indispensable to guarantee reactivity to unforeseen events and continuous adaption to changing constraints. The performance of a supply chain now depends on the capacity of its members to move the decoupling point of information. This study will involve Courier Logistics service providers as one of the decoupling point along the supply chain management.

With the advancement of IT mobilization, data- capturing technologies such as RFID and portable POS systems, and integrated technologies such as cloud computing technologies are promising to connect effectively the information flow between the supply chain members However the in the study showed that only a small number of enterprises adopt cloud computing technology. The major reason is that the industry has serious concerns about the real-time connection and information security of the technology and the study proposed that IT development companies should demonstrate high degree of internet connectivity and should provide multi-layer security mechanism of the technology to help logistics information management system to integrate the hardware and software required and to speed up technology adoption by all supply chain members (Tsan-Hwan Lin, 2014).

Recently developed information systems also allow for sending and receiving information in real time, in addition to the wide range of possibilities, information systems used in the process of transport can bring tangible benefits in the form of: increased transport efficiency, better financial results, and more efficient coordination in the exchange of services. It can be assumed that in the field of information systems for transport, over the years they will still be developing and their capabilities increase, improve their functionality and increase the number of offered tools and applications (Janusz Grabara, 2014).

Logistics in Kenya is one type of operation; operators struggling against, various procedural and physical impediments to move goods along the corridor by various mean e.g. trucking railroad and pipeline. According to the country Economic survey, (2014), total output value from the transport sector expanded by 3.3 % in 2013, with Road transport accounting for 64.3% of this, Cargo throughput handled at the port of Mombasa increased by 1.8% to 22.3 million tons, Railway freight tonnage dropped from 1.4 million tons in 2012 to 1.2 million tons in 2013.Total volume of white petroleum products through pipeline increased from 4.9 million cubic meters in 2012 to million cubic meters in 2013. The country Gross Domestic Products (GDP) expanded by 4.7% in 2013 compared to 4.6 % in 2012. This study will be concerned with the growth of Courier.

Information and communication technologies keep evolving leading to easier and more affordable ways of transferring information and conducting business. Over the last decade, the performance of the Information and Communication Technology (ICT) sector has been robust resulting in it being a major driver of economic growth. Kenya has managed to keep in tandem with the rapidly evolving technology and is a leading country in mobile money transfer system. The rapid expansion of the ICT sector continued in 2014 as reflected by improvement of key indicators. Internet usage has increased exponentially especially after the laying of the undersea fiber optic cables along the Kenyan Coast. This is in addition to formulation and implementation of supporting policies such as the National Optic Fiber Backbone Infrastructure (NOFBI). The Government is implementing the National Cyber security Strategy and National Surveillance, Communication and Controls System to enhance security. (Kenya economic survey 2015)

Kenya logistics performance index (LPI) ranking was at 74th out of 160 countries and is among the top 10 low income performers. The international score uses six key dimensions to benchmark countries ` performance and also display the derived overall LPI index. The scorecard allows comparisons with the world with option to display world best performer with region or income group. The Logistics performance is the weighted average of the country score on key dimensions: Efficiency of the clearance process, infrastructure, ease of shipments, the competence and quality of logistics services, the ability to track and trace, frequency with which shipments reach consignees within scheduled or expected delivery times. (The World Bank, 2014). This study will be about use of information Technology to enhance efficiency and to enhance customer satisfaction since Courier services are mainly used to meet last mile delivery to ultimate customers.

Kenya main players in logistics are the forwarders/Clearing agents, the road transport companies and the express Courier. The first two sectors are mature industries in Kenya, with organized companies and a significant competition in the market. As for express Courier, the international Companies are all present in Kenya and the sub-region with a commercial dominance by DHL. There are over 500 registered clearing agents. The business is dominated by large companies, the most prominent of which are affiliates of global logistics operators such as SDV-TRANSAMI or SDV dominates the market. In fact, not all of them are registered clearing agents; large transport companies in Kenya are all providing forwarding services and operate inland facilities like private container depots (The World Bank Report, 2005).

1.2. Statement of the problem

Despite Government involvement in developing Information Technology infrastructure and regulations and the tremendous growth of Courier Service Industry as per the statistics by the Kenya Economic Survey (2015), there is little to show in the industry operating within Kisumu City in terms of their performance. The need to have efficient information Technology Systems among courier service providers is undeniable because of the increase in electronic commerce globally. Moreover, timely and accurate information has become more critical in logistics systems design and operations; customer perception of information regarding order status, product availability, delivery tracking and invoices as necessary dimensions of customer accommodation.

This calls for a concerted effort in part of all players in the Courier service Industry. This is more so because implementing Information Technology system is an expensive undertaking. To this end the problem of this study was to examine the contribution of Information technology systems to performance of Courier service providers in Kisumu City Kenya with a view to enhancing their operation in terms of efficiency and effectiveness.

1.3.0. Objectives of the study.

1.3.1. Overall Objective.

The overall objective of this study was to determine the influence of Information Technology system on the performance of Courier Logistic service Providers in Kisumu City Kenya.

1.3.2. Specific Objectives.

The specific Objective was to:

(i) To determine the influence of Transaction System on performance of Courier Logistics Service Providers in Kisumu City Kenya
(ii) To determine the influence of collaborative system on performance of Courier Logistic Service Providers in Kisumu City Kenya
(iii) To determine the influence of Decision support system on performance of Courier Logistics Service Provider in Kisumu City Kenya.

1.4. Hypothesis

(i) H_0: There is no statistically significant influence of Transaction system on performance of Courier logistics service providers in Kisumu City Kenya.
$H_{a:}$ There is a statistically significant influence on Transaction system on performance of Courier logistics service providers in Kisumu City Kenya.
(ii) H_0: There is no statistically significant influence of Collaborative system on performance of Courier logistics service providers in Kisumu City Kenya.
H_a: There is a statistically significant influence of Collaborative system on performance of Courier logistics service providers in Kisumu City Kenya
(iii) H_o: There is no statistically significant influence of Decision Support system on performance of Courier logistics service providers in Kisumu City Kenya.
H_a: There is a statistically significant influence of Decision Support system on Performance of Courier Logistics Service Providers in Kisumu City Kenya.

1.5. Scope of the Study

This study was limited to Courier service operators in Kisumu City Kenya which are fully compliant with the regulations of Communication Authority of Kenya.

1.6. Significance of the study

This study has highlighted the influence of performance of courier firm`s adaption of Information Technology Integration This would offer guidelines to the courier firms on how to enhance performance and have a competitive advantage within the industry.

The study will provide a framework for further research that will fill existing gaps in the courier Industry in Kenya in the adaption of Information Technology which is very dynamic. The study will broaden the body of knowledge for consumers, industry players and scholars who may use it as a source of references.

1.7. Limitation of the Study

This study was successfully done but not without a few limitations, one such limitation was that some of the respondents declined to respond to the questionnaire. Time covered by the study and the resources available to the researcher were also limited.

1.8 Assumption of the study

There were no major structural changes in the Courier industry. No major industrial unrest that made it impossible to access information from the employees, and there was no political influence on the operations in the Courier Industry.

2. Literature Review

This chapter reviewed literature relevant on Information Technology influence on performance of logistics service providers. It also gives empirical review of the past research both globally, internationally and nationally it also focuses on theoretical and conceptual framework and concludes with a summary and research gaps.

2.1 Information Technology Systems

Setting the course for Information Technology integration involves a thorough assessment of the IT environment across all major IT components – business applications, supporting infrastructure, organization spending, asset to provide a complete picture of integration opportunities and challenges. This requires close collaboration and partnership with business leaders to determine the business impact of IT integration opportunities – onetime cost, time phased cost savings, timing and risk as well as potential interdependencies. IT opportunities are then based on revenue enhancement, cost savings, timing, level of efforts and risk avoidance (Price water Coperate, 2013).

The implementation of new IT and complimentary investment can lead to innovation and which are positively associated with turnover growth in other words innovative firms are more likely to grow (Seddon, 2005).and according to Bowersox(2009), several countries display impressive economic growth with the aid of IT Prior research concerning of Global economy growth demonstrate the contribution of IT to output growth as being very remarkable for economies during the periods of 1990-1995 and 1996- 2000.

IT in an organization has multiple roles: it increases scale efficiencies of the firm`s operations; it processes basic business transactions; it collects and provides information relevant for decisions and even make decision; it monitors and records performance of function units; it maintains records of status and change in the fundamental business function within the organization and maintain communication channels the above mentioned roles are in the context of an organization. IT can link all activities in supply chain into an integrated and coordinated system that is fast, responsive, flexible and able to produce a high volume of customized product at low cost (Shah 2009).

According to Lyson& Farrington, business entities are able to function with less under head costs through the use of IT services this evident in communication through email services, storage, management and dissemination of Data through database and information system. He explained that information system have made it possible for organization to work together, store, retrieve, process and pass timely information and further states that information systems should be aligned to the overall organization goals and objectives.

The most typical role of Information Technology in Supply Chain Management is reducing friction in transaction between supply chain partners through cost-effective information flow conversely; IT is more importantly viewed to have a role in supporting the collaboration and coordination of through information sharing. Third, IT can be used for decision support. In this instance the analytical power of computers is used to provide assistance to managerial decisions.

The functional roles of IT can be defined in four areas transactional, collaborative, decision support, and reporting. The entire above functional role are essential for each stage in a supply chain. There are numerous supply chain systems in existence.

(Ndonye, 2014) In his study of "Influence of Technology on Logistics Performance in Kenya with reference to Cargo Transport" found that there was a significant positive relationship between the components of information technology namely information flow, logistics integration, Inventory management system and fleet management system with logistics performance. In his study effects of Information Technology on performance of Logistics Firms in Nairobi County Macharia et al(2015) found that organization with integrated information systems performs much better than the organization that are not integrated system enhances communication and information exchange within the organization with suppliers and other customers hence more efficient and effective.

2.2 Courier Service Industry

The report (Schmidt, 2015) found that The Global Courier service delivery industry generates revenue of about $ 220 billion with the United States (US) being the largest market followed by growing markets such as china, India, Europe and Latin America. Over the past few years, the global courier services industry has managed to recover from the global economic slowdown. The Courier and local delivery a service in the US primarily provides express delivery and pickups of parcels. The industry transport goods that are non-palletized and weigh less than 110pounds the industry is divided into two segments: large networked couriers capable of nationwide and international delivery, smaller local service that transports packages within metropolitan areas, the industry is both capital- intensive and labor- intensive labor expenses include wages and salaries paid to drivers, operators of call centers and drop off location and administrative staff and loading crews.

China courier Industry is doing well in spite of a cooling economy And the state grip on the economy is tightening, the private sector`s shares of this market is actually growing more parcel are delivered. For, the industry is highly fragmented, with some 8000 domestic competitors and it is inefficient. One reason is that regulation inspired by sort of regional protectionism, obliges delivery firms to maintain multiple local license and offices, Firms therefore find it hard to build up national networks with scale and pricing power. A handful of the biggest companies now aim to modernize the industry. Some are spending on advance Technology SF Express's new package-handling hub in Shanghai is thought to have greatly increased efficiency by replacing labour with expensive European sorting equipment. A semi-automated warehouse in nearby Suzhou run by Alog, a smaller courier in which Alibaba has a stake, seems behind by comparison but in fact Alog is a partner in Alibaba's logistics coalition, which is known as Cainiao. The e-commerce firms have helped member companies to co-ordinate routes and to improve efficiency through big data. The Economist, (2016).

In Nigeria courier sector has been as one with great potential which if properly harnessed is capable of making more profit and contribute to creation of more jobs within the country. However, a large number of private companies are entering the courier delivery market gradually transforming the monopoly in the market, which was a preserve of the state postal Administration to free and competitive market. The rapid development in Technology and e- commerce poses another challenge which the courier firms in Nigeria have to deal with since it is inversely impacting on the noble of profitability. Regulatory practices of the government which are characterized by bureaucratic and red tapes that can erode the great potential in this sector hence affecting the profitability of the Courier industry players.(Kaveke & Gachunga, 2014).

In the General agreement on Trade and services sectorial classification list (GATS), Postal and courier services, a sector which also includes telecommunications and audio visual services. In the United Nation Central Product classification these services are classified in Post and telecommunication, reflective of long- standing but increasingly outdated tradition of Postal and telecom services being offered by a single state monopoly. This trend has changed with emerging new players in the industry World Trade Organizations (2014).

Definition of courier services: In the service sectorial Classification list, subsector 2B on Courier service is crossed referenced to UNCPC ITEM 7515 which contains two subsystem: (1) multi-modal courier services consisting of pick- up, transport and delivery services, whether for domestic or foreign destination of letters, parcels and packages rendered by courier and using one or more modes of transport; and (2) other courier service, for goods, not elsewhere classified, e.g. trucking or transfer services without storage, for freight. United Nation Statistics Division (2015)

The development of multinational enterprise and increasing requirements of professional have since the 1970s played a major role in the growth of the express mail service Industrial subcontractors have become major clients of the express service, with enterprise trying to reduce their stocks both of intermediate products and finished goods. In a recent International Labour Organization (ILO) study on multinational enterprises in the courier industry service industry, it was noted that one of the main development in recent years has been the growth of the role of "integrators", large international operators which have become specialized in international parcel services with freight forwarding customs broking and other information- intensive activities that enable them to provide efficient pick-up and delivery services. Some railway companies have established their own mail service and DHL has offered equity participation to two airline companies. Globally, the leading companies are DHL Worldwide Express; United Parcel services (UPS), Federal Express (FedEx), many such couriers have established

affiliates in foreign countries to capitalize on rapidly expanding global demand for express courier service.

2.2.1 Courier Services Industry and its Development in Kenya

The Communication Authority of Kenya is the regulatory authority sector in Kenya. Established in 1999 by the Kenya Information and Communications Act, 1998, the Authority is responsible for facilitating the development of the Information and Communications sectors including; broadcasting, multimedia, telecommunication electronic commerce, postal and courier services. The Postal and courier market segments registered positive growth with regard to network development. The sub-sector also recorded an increase in level of competition as indicated by the expansion of outlets operated by private courier operators continued to increase steadily in the fourth quarterly sector statistics report 2014/15. "The number of postal outlets operators increased marginally to 623 during the quarter from 622 in the previous quarter. The number of private courier outlets recorded a sharp increase of 168.7 per cent to record 2117 outlets in the quarter under review up from 788 recorded in the previous quarter. This is as result of the entry of new licensees and expansion to new towns by existing licensees. During the year 2014, the total revenue recorded by the postal and courier sector grew by 20.4 percent to post 8.5 billion shillings compared to 7.1 billion posted in the FY 2013/14. The total investments experienced a decline of 23.5 percent during the year 2014 to record 397 million Kenya Shillings down from 519 million shillings recorded in 2013 (Communications Authority of Kenya , 2015)

2.2.2 Courier Service Operators in Kenya

Public Postal operators; these are firms charged with the responsibility of ensuring provision of universal postal services as obligation (USO) and have the widest international and domestic coverage. International Postal Courier Operators operate internationally with both worldwide and domestic coverage. Receiving items from overseas for local delivery, National Postal Operators are major operators within Kenya and operate with East Africa Network.

All firms offering Courier services are legally subject to licensing considerations. The Public Postal Licensee, all courier firms and delivery firms which include transporters, Freight and forwarding companies that handle documents and parcels all fall under the definitions given in the CCK Act of 1998. The number of licensed Courier Operators increased from 159 in 2010 to 230 in 2014 that is according to Kenya Economic Survey 2015. Though there are many unlicensed operators in operation due to the CCK Tariff requirements and reporting obligations. The latest list of compliant Licensees from the Authority stands at 92 Courier Operators 20 of which are operating in Kisumu City.(Communication Authority of Kenya).

According to a report by Kiragu (October 2016)"Innovation Driving Postal and Courier Business" it stated that technological advancement and more people opting for easier means of communication such as social media or even calls the relevance of the physical postal mail is now coming into scrutiny more than ever before. For courier services providers the mushrooming of all sorts of service providers have complicated the equation making the Industry very competitive. With this in mind industry players in both postal and courier business have been forced to become more innovative if they have to remain afloat it is for this reason that Courier have also had to face the reality of technological changes with operators now taking services online or via the mobile phone. These technological innovations are not only enriching the way people connect but are also ensuring a secure and efficient delivery system.

2.3 Theoretical Literature

2.3.1. Transaction theory.

Transaction cost economics traces its origin to seminal contribution in law, economics, and organization that were made in the 1930s. Leading economics contributions were made by commons (1934) and Coase (1937). Llewellyn (1931) added key legal insight and Barnard (1938) offered an organization theory perspective. Commons urged that the transaction was and should be made the basic unit of analysis. A contractual point of view was adopted and attention was focused on the importance of crafting institutions that serve to harmonize trading between parties with otherwise adversarial. Coase likewise adopted a micro analytical perspective, with emphasis on transaction cost economizing. (Williamson, 1989).

According to Transaction cost theory, Firms and individuals seek to economize on transaction cost, much as they do on production costs, using markets is expensive because of the costs such as locating and communicating with distance suppliers, monitoring contracts, compliance, buying insurance, and obtaining information on products. Information technology, especially the use of networks can help firms lower the cost of market participation making it worthwhile for firms to contract with external suppliers instead of using internal sources. As a result firms can shrink in size because it is far less expensive to outsource work to a competitive market place rather than hire employees.

2.4 Transaction System

Transaction processing systems is a computerized system that performs and records the daily routine transactions necessary to conduct business such as sales order entry. The principal purpose of the system at this level is to answer routine questions and to track the flow of transaction through the organization. Transaction processing systems are often so central to a business that failure of the system for few hours can lead to a firm's demise and that other linked to it.

In every company, business functions i.e. design, manufacture, distribution, service and recycling of products and services collects, generates and store vast quantities of data across these business functions.

Enterprise Resource Planning (ERP) systems provide these capabilities to organization to automate business and enable tracking of information throughout the company across different functions. ERP `` core is a single comprehensive database. The Data base collect data from the feeds and feeds data into modular applications supporting virtually all of an enterprise`s business functions. When new information is entered in one place related information is automatically updated. (Shah 2009)

Inventory management systems provide the ability to run the day-to- day detailed management and control of stock for an organizational within supply chain by considering the upstream and downstream organizations` order, stock and service level data. It control all the traditional day- to day activities of material management operations dealing with stocks goods receipt, goods inspection, goods issue Transport execution system assist transport managers in the task of monitoring the effectiveness of their vehicle fleet. Information regarding vehicle details and vehicles activities is collected (miles covered, tons carried, idle time, fuel used etc.) is collected. Order track and trace allow organization to have smooth and accurate information about order status Also by visiting retailers Web site customers can find the order status no matter where and in which supply chain partner`s possession the order is (Shah 2009).

(Ndonye, 2014). In his study on Influence of Information Technology on Logistics performance in Kenya with reference to Cargo Industry found out that there is positive relationship between the components of information Technology namely; Information flow, Logistic, Integration, inventory management system with logistics performance. The findings also indicated that information Technology is well utilized in the cargo transportation sector in Kenya to improve the efficiency and effectiveness.

2.5 Collaborative System

Supply chain management covers all aspects of the business. As a result, it needs IT applications that are integrated beyond the individual company to include the neighboring enterprises, in recent years collaboration has become the focus of supply chain to work better. The ability to link and work effectively with suppliers has produced a new system called supplier relationship management (SRM), and on the other of the supply chain, customer relation management (CRM) systems are evolving to provide better contact and understanding of customers' needs. It allows sale`s force to track interaction with customers.

Increasing need for collaboration has also increased the importance of ERP systems as well as need for new generation of systems that support internal and external integration. Specific technologies that may be utilized for an effective supply chain collaboration and coordination system include the following; Electronic data interchange (EDI) refers to computer to computer exchange of business documents in a standard formant; Internet at the most basic level, a network of networks provides instant and global access to numerous organizations, individuals and information sources. Through systems like the worldwide web, internet users are able to conduct organized searches on specific topics as well as browse various web sites. (Shah 2009)
Product tracking requires standard way to track products in order to provide participants with the information they need participants with the information they need to perform efficiently. Universal product codes are extensively used for scanning and recording information about products using Barcodes. Recently many companies have started Radio frequency identification (RFID) tags on their products. This technology combined with wireless communication devices and GPS capabilities enables tracking of tagged containers in shipment, one of the major advantages of RFID is that information exchange between tags and readers is rapid, automatic and does not require direct contact or line of sight. Heaney (2013) in his report he found out that RFID Technology and adoption has tended to lag over years but appears to be on the uptick. Overall about 32% of all companies are using this capability today an increase of about 20% from other year findings.

According to Tsan- Hwan Lin, (2014) in the study of factors for information technology acceptance willingness and adoption in logistics industry from supply chain perspectives in Taiwan found out that most of the respondent are practitioners in storage, transport, or third party logistics industry and have developed mid or long term relationships with their partners (suppliers or customers) with respect to the use of information technologies, most enterprises have adopted electronic data interchange (EDI), and bar code and scanning systems. Since Logistics companies often have to deal with a large number of goods and related information, they focus frequently on how to effectively process data collection and exchange. Only a few enterprises use geographic information systems and cloud technologies which will facilitate business information transfer between enterprises. It is also found that third –party logistics industry and logistics industry and logistics companies with long-term cooperation relationships invest more capital in information technologies.

2.6. Decision Support Systems

The transaction systems captures data on orders, inventory, shipment, cost and also keep it up to date and distributes it to users and other applications. A collaboration and coordination system ensures that the supply chain data are available in a timely manner to all the enterprises in the supply chain. DSS use this data to create feasible and economical plans dealing with different stages of supply chain. For DSS to create feasible plans, it should not violate any real –world constraints such as lead time, material availability, labor availability, equipment capacity and transport capacity. Advanced DSS uses optimization technique to ensure that all modeled constraint is respected and that the highest business value is achieved.

DSS entails various levels of decision making depending on the time frame of managerial activities and the

frequency. Strategic level Planning involves the supply chain network design, which determines the location, size and optimal number of suppliers, the production plants and distributors to be used in the network. The tactical level of supply chain management covers the planning of supplies, manufacturing schedules and the forecasting demand, it primarily includes the optimization of flow of goods and services through a given network. The operational level of supply chain management focuses on day –to- day operations and enables efficiencies in distribution, inventory and transportation for short term planning, Transportation planning produces transportation routes and schedules based on availability of transportation on lane, cost and customer delivery schedules. Fleet planning, transportation mode selection, routing and distribution are also part of transportation planning systems. (Shah, 2009).

(Mongare M. E, 2014) in a study of The impact of information communication technology on inventory control system in transport organization: A case study of Kenya Ferry services found that electronic inventory control enables companies to use more efficiently, as it lowers search and evaluation costs and gives access to larger number of potential suppliers. However the impact of electronic inventory control on the number of potential suppliers is subject to asset specification, product complexity and the necessity for relationship specific investment. The study found out that technological integration on inventory control implementation has simplified and speeded up buying process to make it more efficient apart from reducing cost of operational purchasing activities. It had also increased compliance with procurement laws and regulations while reducing cost of tactical inventory control activities. It had also led to better access to information and transparency in markets through a simplified, standardized, purchasing process. The study also indicate that due to technological shortcomings in the process has become more complex and requires increased employee knowledge and has eventually lead to exclusion of suppliers lacking electronic capabilities.

2.7 Performance

The History on performance measurement has evolved ever since its emergence in the 1980s. Historically, when organizations were small and operations and operations simple, the primary performance measurement was done on the basis of cash flow of the organization. From the late nineteenth century until 1930s, theoretical and practical methods of management accounting were established, and standards were widely applied. Traditional management accounting techniques became the accepted method of performance measurement for manufacturing plants and their distribution operation. As performance measurement research progressed, some researchers focused on the performance criteria, standards, measures. However, the older body of performance measurement Literature lacks cohesion (Lockamy, 1998)

Performance refers to the nature and quality of an action that an organization carries out to accomplish its principal missions and functions for the generation of profit (Sink, 1991). Performance measurement is a metric that can be used to quantify organization functions. It is an analytical tool in the performance measurement process that records measures, displays results, and determines subsequent actions. Generally, performance measures have financial or non- financial and tangible or intangible classifications. Financial performance measures tends to focus on the resultants impact in financial performance measures tends to focus directly on actual production activities, such as investment turnover defect ratio and lead time (Polakoff, 1992)

To study the performance measurement of the Courier logistics providers the variables discussed in this Research are customer satisfaction, organizational effectiveness and efficiency. Whereas supply chain performance evaluation can take many identities as has been shown above Researchers agree on internal measurement, cost calculation and performance management focuses on the measurement and evaluation decision making on company performance. Effectiveness measures the capability of producing an intended result. It thus concerns the outside of organization- what results does the organization achieve. Efficiency is the measurement for producing results taking into account used resources. It thus refers to the inside, of the organization. How does the organization achieve its result? We may also say that efficiency measures the ratio between input and output.

Customer satisfaction is done by knowing the customer expectation. What the customer is requiring? It should be completed with all aspects and full in quantity and should reach customer place timely. The special benefit of advance technology is to make real time data extensively available through such tools as Enterprise Resource Planning (ERP), Electronic Data Interchange (EDI) and customer relationship management and ability to link one activity with another. These tools not only improve the business but also infrastructure for automated information exchange between suppliers and customers that is linked with increased customer profitability /satisfaction (Porter and Millar, 1985).

Customer satisfaction can also be done by efficient customer services by third party logistics service providers on behalf of the company by providing reverse logistics service, providing after sales service at door step of customer within no time on customer`s single phone or single e- mail should be sufficient to respond back to customer immediately. Logistics service Providers can also have online feedback and complaint system for their customer. How much 3PL can satisfy the customer? This can be measure with the help of two factors; service level and ability to serve the customer by giving good customer service actually to both of its customers, client and consumer of products. If they are performing well giving on time and full delivery, good customer service, IT systems, after sales service, feedback systems, efficient logistics with all aspects they can really satisfy the customers, not only satisfy they can enhance the customer satisfaction. So 3PL`s with advanced information technology can increase the customer satisfaction. (Sheikh & Rana, 2012)

According to Sheikh & Rana (2012) within their theoretical review framework on the Role of Third Party Logistics Providers With advanced IT to increase customer Satisfaction in supply Chain Integration concluded that third party logistics providers really have important position in any company. Third party logistics providers are really helpful to enhance the customer satisfaction and to integrate the different processes of supply chain by using advanced tools of information technology. Logistics operation can be outsourced to reduce the capital investment and to concentrate towards other important issues of the company. 3PL has significant role in supply Chain integration and has greater impact on customer satisfaction with the help of advanced information technology tools. This study reflects that customer satisfaction level can be increased by using 3PL with advance Technology.

Also the study found that Third party Logistics service providers are really helping in improving the company`s logistics efficiency to enhance the customer satisfaction to integrate supply chain. It means putting together different processes of supply chain to make it much more efficient and effectiveness with the help of advance information technology. Third Party logistics service providers also helping companies in their transportation / distribution, customer service, warehousing, IT support, route planning, reduction in operational budget and providing value added service to enhance customer satisfaction level. There is now quite conclusive evidence of a strong positive correlation between IT investment and economic performance. In his study on Logistics Information Technology adaption on performance outcomes Hazen and Byrd (2011) found that the implementation of Logistic Information Technology innovations produces positive performance outcomes for the adopting organizations

Logistic performance is empirically measured in terms of turnover growth and customer base expansion. The hypothesized relationship between IT and turnover growth is straight forward, the implementation of new IT and complimentary can lead to innovation and innovation which are positively associated with improved performance The effect of IT on performance are subject to debate because not all studies have demonstrated clear payoffs IT investment (Macharia, 2015).

In her study on effects of logistics management practices on organization performance in Kenya Nyaberi (2014) found out that the development of information systems in logistics management has contributed positively in improving the performance in general for the company and concluded by stating formulation and design of information systems logistics management so as to fasten the flow of information and create seamless operation which will attract more customers and reputation in the competitive environment. Mwangi (2014) who also carried a study on factors that Influence the performance of Logistics Management found that the study showed that Technology plays a very important Role in influencing the performance of Logistics management functions in organizations.

Efficient and effective improvement of organization is central to the functionality of information systems according to Rockart and Schott(1984) they stated that traditional information systems are crucial for firms competitive position that this systems through their effect on staff, structure of the organization and processes of management can effect competitive result.

2.8 Summary of literature and Gap Identification

The courier service Industry in the United States Primary provide express delivery and pickup of parcels The Industry transports goods that are non-palletized and weigh less than 110 pounds. The Industry is divided into two segments, large networked couriers of nationwide and international delivery, smaller local services.

Most of the studies reviewed in the literature were mainly on the various technologies systems and the impact on logistics service provider's performance and also based on a particular activity in the logistics. Despite the extent of documented studies on logistics performance there is limited evidence on studies on information technology and how it influences logistics performance in Kenya, more so on Courier service operators. In this case a dedicated study is required to establish the influence of information technology function on logistics performance among the Courier service Operators in Kisumu City, Kenya. This study will also focus on the information Systems functionality in terms of management.

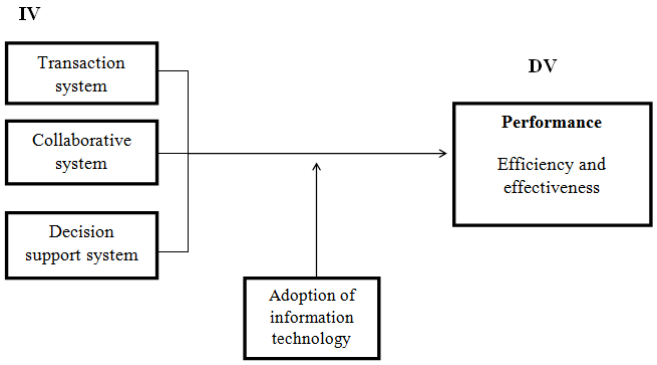
The courier industry has been experiencing a huge growth, with several firms joining the market. The industry is now occupied by courier companies that mostly do intra and intercity logistics services, Bus companies and security firms that mostly deal with, upcountry deliveries. There are also International companies that have established themselves as reputable companies in Kenyan industry. According Kenya Economic survey (2015), The Number of registered licensed Courier operators have risen from 159 in 2010 to 230 in 2014 showing the significant growth in the Industry, but limited empirical data on it performance in terms of efficiency and effectiveness.

Orunga(2013) on his report on the Courier Industry in Kenya he founded that most Companies had not realized the need to employ technology their delivery operation, major industry players such as international firms operating within the country have exploited the use of technology in making their operations more efficient most delivery companies have not aligned themselves with changes in technology, this has led to huge difference in terms of market share, lack of proper technology in place has led to most companies experiencing problems hindering their growth and expansion.

2.9 Conceptual Framework

According to Lee and Wang (2001) conceptual framework of a study, the systems of concept, assumption, expectation, beliefs and theories that supports and informs your research is a key part of your design. "A conceptual

Framework is a visual or written product, one that explains either graphically or in narrative form the main thing to be studied, concepts, or variables and the presumed relationship among them.



Source: Shah 2009 (Adopted and modified)
Figure 1.1: Conceptual framework

The conceptual frameworks in this study will give an overview of the independent variable and dependent variables that defines the objective of the research.

This concept is based on Shah (2009) who stated that Information Technology multiple roles; it increases scale efficiencies of the firm`s operations; it processes basic business transactions; it collects and provides information relevant to managerial decisions and even makes decisions it monitors and records the performance of employees and function units; it maintains records of status and change in the fundamental business functions within the organization and maintains communication channels. But in supply chain management he stated the IT plays the following role that is, it support frictionless transaction execution through supply chain executions systems, it is a means for enhancing collaboration and coordination through supply collaboration systems, decisions support systems to aid in better decisions and it is important for companies to measure their supply chain performance through IT based intelligence.

Transaction systems is formalized rules, procedures and standardized communication, a large volume of transaction and operational, day - to- day focus at the most basic level the transaction systems initiates and records individual activities this include functions like, order entry and customer inquiry, pricing, invoicing, shipping. Collaboration and coordination through information sharing along the supply chain IT systems that are integrated beyond individual company this integration should result in data that flow seamlessly throughout the supply chain, enabling all enterprises to work better. Decision support Software tools that assist managers in identifying, evaluating and comparing strategic and tactical alternatives to improve effectiveness this may include vehicle routing and scheduling deliveries facility location and cost benefits analysis of operational trade-off. Decision analysis in logistics may include database maintenance, modeling, and analysis and also customer relations management.

Although each individual technology boast of a set of anticipated benefits the vast majority of the performance outcomes resulting from the adoption of various technologies, this research defines performance outcome as any result that effects business function of the organization, whether in a positive or negative way In this study performance outcome are classified within one of the three categories (adapted and modified from Hazen and Byrd 2011): Efficiency which encompasses outcomes that reduce cycle time, improve resource management, or increase productivity. Effectiveness which encompasses outcomes that improve decision making, improves planning, improve resource management or improve delivery. Measure of efficiency and effectiveness capture the extent to which an organization not only does the right thing but does them right.

3. Research Methodology

This chapter involves hierarchal steps on how the research was carried out in details. It discusses various steps adopted by this study in determining the influence of information Technology on performance of Courier logistics service providers in Kisumu County. Research Methodology is a science of studying how research is done scientifically this involves steps on how research is carried out in details (Kothari, 2004). The chapter present details of the Research design, target population, sample and sampling procedures, description of research instruments, validity and reliability of instruments, data collection procedures and data analysis technique.

3.1 Research Design

A descriptive research design was used in this study according to Orodho (2014) research designs refers to all the procedures selected by a researcher for studying a particular set of question or hypothesis. A descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. This design was considered appropriate in this study since it describes what is happening at present.

3.2 Area of study

Kisumu City is a port city in western Kenya with a population of 394, 684(2009 Census) it is the third largest city in Kenya the immediate former capital of Nyanza province and the Headquarters of Nyanza province and now the Headquarters of Kisumu County, it is the largest city in the region and second important in the great lakes Victoria basin.

3.3 Target Population

Thepopulation of the study was all the 20 licensed Courier service providers in Kisumu City as listed by the Communication Authority of Kenya (2016). A population refers to any group of institutions, people or objects that have common characteristics. (Ogula, 2005).

3.4 Sample and Sampling Design

According to Kothari (2004) when the Universe or population is a small one, it is no use resorting to a sample

survey. Since the population was only 20, this study adopted the census inquiry. Census inquiry is a complete enumeration of all items in the population (Orodho2004). This means that the sample for this study was all the 20 licensed Courier service providers. However 10% was delineated for pilot study. This left 18 Courier service firms as the sample for this study. Further many a times it is not possible to examine every item in population, and sometimes it is possible to obtain sufficiently accurate results by studying only a part of total population(Kothari2004), in this respect purposive sampling was used to sample the respondent in each of the sampled firms. According to Kothari (2014) this involves purposive or deliberate selection of particular units of the universe for constituting a sample which represent the universe. In this study only those with required information that is one manager and one supervisor constituted the sample population. This brought the number of sampled respondent from each of the sampled firms to 36 respondents.

3.5 Data collection

3.5.1 Type and source of Data

The Research was based on primary data collected through semi- structured questionnaire.

3.5.2 Data Collection Procedure

The Researcher proceeded to obtain permission from Jaramogi Oginga Odinga University which was done through a Letter attached to the appendices the questionnaires were then administered to 36 respondents. The researcher in person distributed the questionnaire to the sampled individuals who were managers and supervisors during which the purpose of the research was explained to them.

3.5.3 Instrument for Data Collection

The main instrument of data collection was semi-structured questionnaire divided into three sections to cover: General Information, Independent variable and the Dependent variable with a scale of 1 to 5: Very low extent, Low extent, Moderate, High extent and Very high extent respectively.

3.5.4 Reliability Test for Data Collection Instrument

Reliability is the level of internal consistency or stability of measuring device overtime Borg and Gall (1986). In a research study reliability can be computed to indicate how reliable data is. The structured questionnaire was designed to yield information that was relevant and correct to the research objective. Pilot test was done, to check whether the instrument would yield the desired results, completeness and accuracy. The pilot test was done on the 2 License Courier service providers the semi structured questionnaire was then administered to the 4 respondent.

The questionnaire was then tested for reliability using Cronbach Alpha internal consistency text. The result yielded 78.9%. This study therefore concluded that the Instrument was reliable According to Mugenda and Mugenda(2010), Cronbach of 70% and above is deemed reliable In this study the internal consistencies test yielded an α 78.9% which is a way above the recommended baseline of 70%.(Cronbach`s $\alpha \geq 0.70$).

3.5.5 Validity Test for Data Collection Instrument

Validity is degree to which any measurement approach or instrument succeeds in describing or quantifying what it is designed to measure (Weiner, 2007).Further in order to ascertain the validity of the instrument face validity was performed by the supervisors as logical on the face of it.

3.6 Data Analysis and Presentation

Before the analysis all the questionnaires were checked for data verifications, tabulated and classified according to the objectives then coded. The quantitative data was analyzed through statistical technique and was generated using Statistical Package for Social Sciences (SPSS) The data analysis was done using descriptive statistics and inferential. Descriptive was done on objective one, two and three. According to Kothari, (2004).Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. In this study, Data on the objectives were analyzed using percentages and presented using Tables. Orodho (2004) defines data analysis as a process of systematically searching and arranging interview transcript, field notes, data and other materials obtained from the field with the aim of increasing your understanding of them and enabling you to present them to others.

Objective four was analyzed using inferential statistics. According to Kothari and Garg (2014) Inferential is used to allow one make prediction from the data about the population. In order to understand the relationship between the variables under study that is, the influence of Information Technology Function System on Performance, a correlation study was carried out by Chi-square test at 5% level of significance using SPSS version 20.

4. Findings and Discussions

This chapter presents the research findings through data analysis and presentation of the data collected from 16 courier service providers in Kisumu City. Out of 36 questionnaires presented, there were 32 questionnaires which were received back. That represents 89% respondent rate. Mugenda and Mugenda, (2003).States that response rate of 60% is good and above 70% is perfect. The chapter begins with demographic data then findings in line with the research objectives and research variables demonstrating the relationships among the various variables the data is presented in form of Tables, frequencies and percentages in line with research design and objectives.

4.1 Company size

The table below presents the categories of the size of the

Courier Service Providers in Kisumu City.

Table 4.1: Company size

Category	*Frequency*	*Percentage %*
Small	1	3.1
Medium	8	25.0
Large	13	40.6
International	10	31.3
Total	**32**	**100**

From Table 4.1 above most of the courier service providers in Kisumu City are large and International as indicated by 40.6%. This is followed by international Courier service at 31.3% respectively. And small medium Enterprises which are competing for the remaining Market share representing 28.1%.

This can be attributed to licensing requirement and reporting obligations by the Communications Authority of Kenya locking so many small and medium enterprises, at the same time the dominance by large and International companies can be explained by the fact that the Courier industry is both Capital and labour intensive. This is according to Schmidt (2015) Labour expenses include the wages and salaries paid to drivers, pilots, operators of call centers and drop off location, ground and administrative staff and loading crew.

4.2 Years in operation.

The Table 4.2 below shows the years each of the companies have been in operation.

Table 4.2: Year in operation

Year in operation	*Frequency*	*Percentage %*
≤ 1yr	1	3.1
2-3 yrs	1	3.1
4-6 yrs	5	15.6
7-9 yrs	9	28.1
> =10 yrs	16	50.0
Total	**32**	**100.00**

As can be seen from the above Table 4.2, Majority of the Courier firms have been in operation for more than 10 years, at 50 %. Less than 9 years is also represented by 50%.This can be interpreted to mean that there has been a steady growth in the Industry, and supported by Kenya Economic Survey (2015) report which indicated, that the number of Courier Service Operators increased from 159 in 2010 to 230 in 2014.

4.3 Number of Employees.

The number of employees was also analyzed and presented in the Table 4.3 below

Table 4.3: Number of employees

No. of employees	*Frequency*	*Percentage %*
2.00	3	9.4
3.00	2	6.3
4.00	1	3.1
5.00	2	6.3
6.00	2	6.3
8.00	2	6.3
12.00	2	6.3
15.00	5	15.6
30.00	3	9.4
50.00	5	15.6
62.00	2	6.3
100.00	1	3.1
50	1	3.1
Missing	1	3.1
Total	**32**	**100**

The above Table 4.3 show relatively few numbers of employees. This can be attributed to the size of the Courier firm or the adoption of Information Technology supported by the transaction cost theory. Which states that, Information Technology, especially the use of network can help firms lower the cost of market participation making it worthwhile for firms to contract with external suppliers instead of using internal sources. As a result firms can shrink in size because it is far less expensive to outsource work to a competitive market place rather than hire employees.

4.4. Education Level

The study then explored the Education level of the respondents

Table 4.4: Education level

Education level	*Frequency*	*Percentage %*
O- level	15	46.9
A-level	4	12.5
Certificate	3	6.4
Diploma	4	12.5
Degree	5	15.6
Masters	1	3.1
Total	**32**	**100**

From Table 4.4 above, most of the respondents had O-level and A- Level of Education which is represented by 46.9% and 12.5% respectively. The level of Education was to validate the quality of response in terms of understanding the questions before them. However the researcher didn't establish whether the Professional qualification in terms of Certificates, Diplomas, Degrees and Masters were Logistics related.

4.5. Type of operational license.

The industry is under strict regulation by Communication Authority of Kenya which has three categories of registration based on annual fee of 0.4% of annual gross turnover whichever is higher for different Category (www.ca.go.ke)

4.5 Types of operational license

Type of operational license	*Frequency*	*Percentage %*
Public postal	1	3.1
International operator	12	37.5
National	19	59.4
Total	**32**	**100**

The Table 4.5 indicates that majority of Courier Service Providers in Kisumu City are licensed to operate nationally represented by 59.4%. This confirms the CAK

Report 2015 that National Operators are the majority operators. There is only one licensed under Public Postal and that is Postal Cooperation of Kenya. There is also a large presence of international operators at 37.5%

4.6 Transactions System adopted by the Courier Service Providers in Kisumu City.

The study then sought to find out the adoption of various Transaction Function Systems and presented in the Table 4.6 below.

Table 4.6: Transaction System

Transaction system	*VH %*	*H%*	*M%*	*LE%*	*VLE%*	*TOTAL%*
Point of sale system	46.9	28.1	25	-	-	100
Enterprise resource planning	43.8	50	6.3	-	-	100
RFD	25	37.5	25	12.5	-	100
Computer software/data base	46.9	34.4	12.5	6.3	-	100
Transport execution system	62.5	28.1	9.4	-	-	100
Cashless systems	56.3	18.8	18.8	3.1	-	100
TOTAL	281.4	196.9	97	21.9	0	100
% MEAN	**46.9**	**32.81667**	**16.16667**	**3.65**	**0.0**	**100**

The Table 4.6 indicates that most of the courier service providers have adopted various transaction function systems at very high and high extent level with Transport execution system being the highest adopted with most courier companies at 62.5% and 28.1% respectively while the RFID system is having the lowest level of implementation at very high extent.

The researcher also noted an average implementation of other Transaction Function Systems.

4.7. Collaborative Systems adopted by the Courier companies in Kisumu City

The table 4.7 below analyses the various collaborative function systems and the level of adoption.

Table 4.7: Collaborative System

Collaboration	*VH %*	*H%*	*M%*	*LE%*	*VLE%*	*TOTAL%*
Transport system	62.5	15.6	12.5	3.1	6.3	100
Mobile phone technology	75	18.8	3.1	-	3.1	100
Electronic data interchange	75	18.8	6.3	-	-	100
Website/internet	68.8	21.9	9.4	-	-	100
Customer relations mgt technologies	71.9	25	-	3.1	-	100
GPS Technology	18.8	9.4	3.1	68.8	-	100
TOTAL	372	109.5	34.4	75	9.4	100
% MEAN	**62.0**	**18.25**	**5.733**	**12.5**	**1.567**	**100**

The table 4.7 indicates that most of the Courier Service Providers have adopted various Collaborative Function Systems at very high extent with electronic data interchange and mobile phone technology being the highest adopted by most companies at 75% while GPS technology being the least implemented technology by most companies. This confirms the CAK report 2015 that mobile technology is steadily increasing and is the most used technology in Kenya GPS technology is less utilized at 68.8% less extent this concurs with Tsan- Hwan (2014) in the study on Factors for Information Technology acceptance willingness and adoption in logistics industry from supply chain perspective in Taiwan and found out that only a few enterprises use Geographical Information System to facilitate business information transfer between enterprises.

4.8 Decision Support System adopted by the Courier Service Providers in Kisumu City

The Decision Support Function System was also queried and presented in Table 4.8 below

Table 4.8: Decision Support Systems

Decision support	*VH %*	*H%*	*M%*	*LE%*	*VLE%*	*TOTAL%*
Route scheduling	71.9	12.5	12.5	3.1	-	100
Fleet planning	43.8	21.9	-	34.4	-	100
Vehicle routing technology	43.8	28.1	3.1	25	-	100
Reports	34.4	43.8	-	21.9	-	100
TOTAL	193.9	106.3	15.6	84.4	-	100
% MEAN	**48.475**	**26.575**	**3.9**	**21.1**	**0**	**100**

As table 4.8 shows, there is a clear increase in implementation of Decision Support Systems by various courier service companies with route scheduling being the most deployed at 71.9%.

Generally, the decision support system has been implemented at VH (Very high extent) averagely at 48.475% by various Courier Service Companies in Kisumu City while the LE (Low extent) standing at 21.1%

this clearly indicate the average implementation of Decision Support System by various companies.

4.9. Performance

The study sought to find out what the respondent felt the Information Technology system functions has contributed to the performance in terms efficiency and effectiveness within the Courier Service Providers in Kisumu City.

Table 4.9: Performance of Courier Service Providers in Kisumu City

Performance	*VH%*	*H%*	*M%*	*LE%*	*VLE%*	*TOTAL*
Reduction in process cost	50.0	31.3	9.4	6.3	3.1	**100**
Improvement in equipment utilization	59.4	31.3	9.4	-	-	**100**
Improvement in planning process	53.1	40.6	3.1	3.1	-	**100**
Improvement in responsiveness	56.3	40.6	3.1	-	-	**100**
Facilitate decision making	56.3	40.6	3.1	-	-	**100**
Improvement in relationship with training partners	59.4	31.3	9.2	-	-	**100**
Decrease in number of administrative staff	53.1	12.5	12.5	18.8	3.1	**100**
Reduction in the cycle time	53.1	15.6	15.6	12.5	3.1	**100**
Enhance channel cooperation	50.0	37.5	12.5	-	-	**100**
Reduced delivery on incorrect items	53.1	28.1	9.4	6.3	3.1	**100**
TOTAL	**543.8**	**309.4**	**87.3**	**47**	**12.4**	**1000**
% MEAN	**54.38**	**30.94**	**8.73**	**4.7**	**1.24**	**100**

Table 4.9 above, indicates that there is an increase in performance where most companies have indicated that the level of technology has contributed tremendously to the performance of their organizations. The level of technology has averagely influenced all the key factors of performance with improvement of equipment utilization and improvement in relationship with trading partners being the highest at (VH) 59.4% and (H)31.3% while reduction in cost and enhancement of channel cooperation being the lowest at (VH) 50.0%. Therefore, the researcher noted that the level of technology adaption and integration has direct influence on the performance of the Courier Service Providers in terms of efficiency and effectiveness.

4.10 The relationship between Information Technology Systems and Performance

The relationship between Information Technology System and Performance was analyzed under the following Hypothesis;

4.10.1 Transaction System and Performance

H_0: There is no statistically significant influence of Transaction System on performance of Courier Logistics Service Providers in Kisumu City Kenya.

$H_{a:}$ There is a statistically significant influence on Transaction system on performance of Courier logistics service providers in Kisumu City Kenya.

The transaction system was analyzed using Chi-square test of significant at 0.05 level of significance and the findings presented below

Table 4.10.1: Chi- square test for Transaction System and Performance

	Value	*df*	*Asymp. Sig. (2 sided)*
Pearson Chi-square	164.331	135	.044
Likelihood Ratio	79.091	135	1.000
Linear by Linear association	2.627	1	.105
N of valid Cases	32		

Table 4.10 above shows that there is a positive and statistically significant relationship between the Transaction Function and performance of Courier Service Providers in Kisumu City (X^2 = 164.33; p< 0.44), this implies that on the basis of evidence, Transaction Function System significantly influence performance of Courier Logistics Service Providers in Kisumu City.

The findings further concur with Ndonye (2016)) in his study on Influence of Information Technology on Logistics performance in Kenya with reference to Cargo Industry which found out that there is positive relationship between the components of Information Technology namely; Information Flow, Logistic, Integration, and Inventory Management System with logistics performance. The findings also indicated that Information Technology is well utilized in the cargo transportation sector in Kenya to improve the efficiency and effectiveness. It was also noted that a new technology was in one of the Courier Logistics Service that is Point of delivery system where confirmation of transaction by the customer is done electronically. This saves time and reduction in cost paper work.

4.10.2. Collaboration System and Performance

The Collaboration Function System was analyzed using Chi- square test of significance at 0.05 level of

significance and the findings presented below,

H_0: There is no statistically significant influence of Collaborative system on performance of Courier logistics service providers in Kisumu City Kenya.

H_a: There is a statistically significant influence of Collaborative System on performance of Courier logistics service providers in Kisumu City Kenya

Table 4.10.2: Chi- square test for Collaboration System and Performance

	Value	df	Asymp. Sig. (2-sided)	
Person Chi-square	207.337	150	.001	
Likelihood ratio	91.228	150	1.000	
Linear by linear association	1.509	1	.219	
No of valid case	32			

Table 4.10.2 above shows that there is a positive and statistically significant relationship between the collaboration system and performance of the courier service providers in Kisumu City (X^2 =207.337; p= 0.001). This implies that collaboration function system has some influence on the performance.

According to Tsan- Hwan Lin, (2014) in the study of factors for information technology acceptance willingness and adoption in logistics industry from supply chain perspectives in Taiwan found out that most of the respondent are practitioners in storage, transport, or third party logistics industry and have developed mid or long term relationships with their partners (suppliers or customers) with respect to the use of information technologies, most enterprises have adopted electronic data interchange (EDI), and bar code and scanning systems. Since Logistics companies often have to deal with a large number of goods and related information, they focus frequently on how to effectively process data collection and exchange. Only a few enterprises use geographic information systems and cloud technologies which will facilitate business information transfer between enterprises.

4.10.3. Decision Support System and Performance

The Decision support function system was analyzed again using the Chi –square and the findings presented below

H_o: There is no statistically significant influence of Decision Support system on performance of Courier logistics service providers in Kisumu City Kenya.

H_a: There is a statistically significant influence of Decision Support System on performance of Courier Logistics Service Providers in Kisumu City Kenya

Table 4.10.3: Chi-square test for Decision Support System and Performance

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-square	178.053	135	.008
Likelihood ratio	91.457	135	.998
Linear by Linear association	3.559	1	.059
No of valid cases	32		

Table 4.12 above shows that there is a positive and statistically significant relationship between the decision support system and performance of Courier service providers in Kisumu City (X^2 = 178.053; p= <.008 the finding concurs with Mongare (2014) in a study of The impact of information communication technology on inventory control system in transport organization: A case study of Kenya Ferry services found that electronic inventory control enables companies to use more efficiently, as it lowers search and evaluation costs and gives access to larger number of potential suppliers. However the impact of electronic inventory control on the number of potential suppliers is subject to asset specification, product complexity and the necessity for relationship specific investment.

The study found out that technological integration on inventory control implementation has simplified and speeded up buying process to make it more efficient apart from reducing cost of operational purchasing activities. It had also increased compliance with procurement laws and regulations while reducing cost of tactical inventory control activities. It had also led to better access to information and transparency in markets through a simplified, standardized, purchasing process. The study also indicate that due to technological shortcomings in the process has become more complex and requires increased employee knowledge and has eventually lead to exclusion of suppliers lacking electronic capabilities.

5. Summary of Findings Conclusions and Recommendations

This chapter presents the summary of the Research findings, conclusion drawn and recommendations.

5.1 Summary

Based on the Research Objectives, the following are the summary findings

(i)H_0: There is no statistically significant influence of Transaction system on performance of Courier Logistics Service Providers in Kisumu City Kenya.

$H_{a:}$ There is a statistically significant influence on Transaction System on performance of Courier logistics service providers in Kisumu City Kenya.

The findings shows positive and statistically significant relationship between the Transaction System and performance of Courier Service Providers in Kisumu City (X^2 = 164.33; p< 0.44), this implies that transaction function system has influence on performance of Courier logistics Service providers in Kisumu City.

Therefore the null hypothesis is rejected and alternative accepted that there is a positive significant influence of Transaction Systems on Performance of Courier Service Providers in Kisumu City.

(ii)H_0: There is no statistically significant influence of Collaborative System on performance of Courier Logistics Service Providers in Kisumu City Kenya.

H_a: There is a statistically significant influence of Collaborative system on performance of Courier Logistics Service Providers in Kisumu City Kenya

The chi-square test on collaboration function system and performance of the Courier Service Providers in Kisumu City revealed a test of (X^2 =207.337; p= 0.001).

Therefore the null hypothesis is rejected and alternative accepted that there is positive significant influence of collaborative systems on performance of Courier Service Providers in Kisumu City

(iii). H_o: There is no statistically significant influence of Decision Support system on performance of Courier logistics service providers in Kisumu City Kenya.

H_a: There is a statistically significant influence of Decision Support system on performance of Courier logistics service providers in Kisumu City Kenya.

Finally, a chi-square test onthe decision support function system and performance of Courier Service Providers in Kisumu City showed a test of (X^2 = 178.053; p= <.008) which implies that Decision Support Function System has some significant influence on performance of Courier Service Providers in Kisumu City.

Therefore the null hypothesis is rejected and the alternative accepted that there is a positive significant influence of Decision Support Systems on performance of Courier Service Providers in Kisumu City.

5.2 Conclusion

Therefore based on the above results of hypothesis, we can conclude that there is a positive and significant influence of Information Technology systems on performance of Courier Service Providers in Kisumu City Kenya.

This result concurs with the findings of Macharia et al (2015), who concluded that the level of information among the logistics firms in Nairobi County contributed to their performance.

5.3 Recommendation

Based on the findings the researcher recommends the following;

The Courier Service Providers should enhance the use of RFD system to enhance efficiency and effectiveness which leads to customer satisfaction.

The use of GPS technology should be strengthened to enhance collaborative functions in the Courier Service Industry.

The Decision Support Systems should be improved to aid in making optimal decision on the operation of service providers to enhance efficiency and effectiveness.

Although this research has established a significant relationship of Information Technology on performance the extent or impact depends on the adaption of various Information Technologies by individual Courier Service Providers. This research could not also establish level of logistic professionalism among the Courier Service Provider's employees hence the field is still subject for further studies and also factors affecting the adoption of various innovative technologies.

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